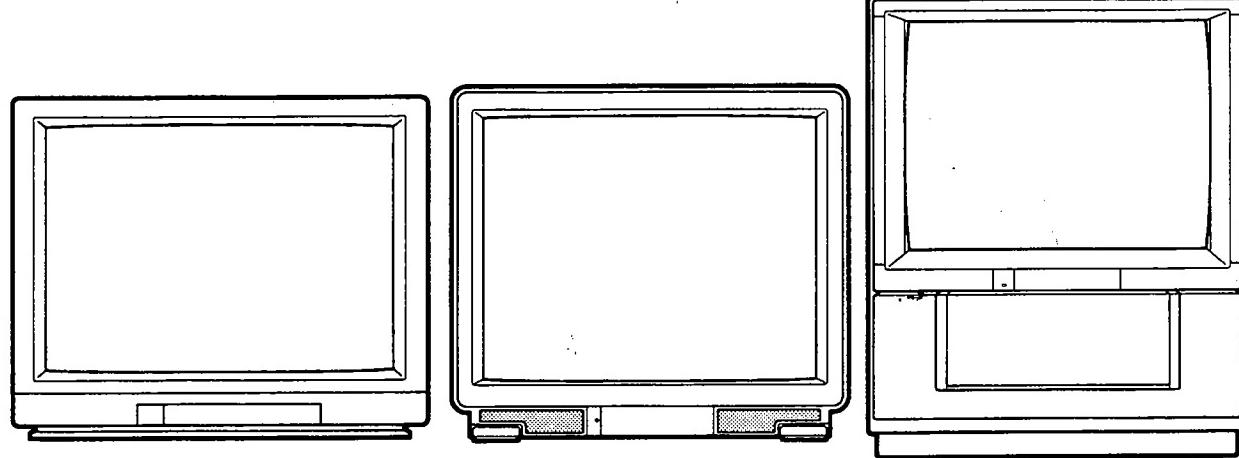




Service Manual

COLOR TV
JU-0 CHASSIS



MODEL

CS-31203, CS-31203C
CS-31303, CS-31303C

MODEL

CS-35303

MODEL

CK-35304

CAUTION

Before servicing this chassis, it is important that the serviceman reads the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" in this service manual.

SPECIFICATIONS

- Power Input : AC 120V ; 60Hz
- Power Consumption : 175W [CS-31203, CS-31203C]
180W [CS-31303, CS-31303C]
195W [CS-35303, CK-35304]
- Reception Frequency : VHF 54~470MHz
UHF 470~806MHz
- Speaker : 2"×3.5", 2pcs. [CS-31203, CS-31203C]
[CS-31303, CS-31303C]
3.9" Round type, 2pcs.
1.6"×3.1"Oval type, 2pcs. [CS-35303]
3.9" Round type, 2pcs. [CK-35304]
- Picture tube : M78JUA060×11 110° Deflection
[CS-31203, CS-31203C]
[CS-31303, CS-31303C]
A89KPP50×03 110° Deflection
[CS-35303]
M89KZP411× 110° Deflection
[CK-35304]

- Picture high voltage : 30.0kv (at 1mA) [CS-31203, CS-31203C]
[CS-31303, CS-31303C]
29.0kv (at 1mA) [CS-35303]
32.0kv (at 1mA) [CK-35304]
- Cabinet Dimensions : 30.7" (W)×26.4" (H)×21.8" (D)
[CS-31203, CS-31203C]
[CS-31303, CS-31303C]
29.4" (W)×34.5" (H)×24.0" (D)
[CS-35303]
36.5" (W)×44.1" (H)×24.2" (D)
[CK-35304]
- Weight : 129.8lbs [CS-31203, CS-31203C]
[CS-31303, CS-31303C]
168.2lbs [CS-35303]
243.7lbs [CK-35304]

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

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SAFETY PRECAUTIONS

NOTICE : Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
2. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
3. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

X-RADIATION WARNING

The surface of the cathode ray tube may generate X-Radiation. Take precautions when servicing and, if possible, the use of a lead apron is recommended for shielding while handling.

When replacing the cathode ray tube, use only the designated replacement part since it is a critical component with regard to X-Radiation as noted on page 2. (No high-voltage adjustments are provided.) The high-voltage specification is described on the cover page.

LEAKAGE CURRENT CHECK

Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an ohm-meter, connect one lead to the AC plug and touch the other lead to each exposed metal part (antennas, handle bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 meg ohm. Any resistance below this value indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

2. Hot Check

Use the circuit in Fig. 1 to perform this test.

- (1) With switch S1 open, connect the receiver to the measuring circuit. Immediately after connection, measure the leakage current using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions.
- (2) Switch S1 is then closed, energizing the receiver. Immediately after closing the switch, measure the leakage current using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions. Current measurements of items (1) and (2) are to be repeated after the receiver has reached thermal stabilization. The leakage current shall not be more than 0.5 miliamper.

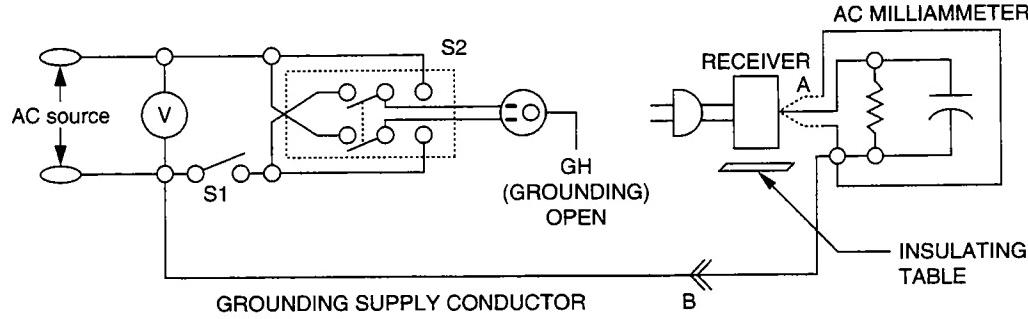


Fig. 1

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have special safety characteristics are identified in this service manual. Electrical components having such features are identified by shading on the schematic diagram and the parts list of this service manual, and by marking on the supplementary sheet for this chassis to be issued subsequently. Therefore replacements for any safety party parts should be identical in value and characteristics.

DISASSEMBLY

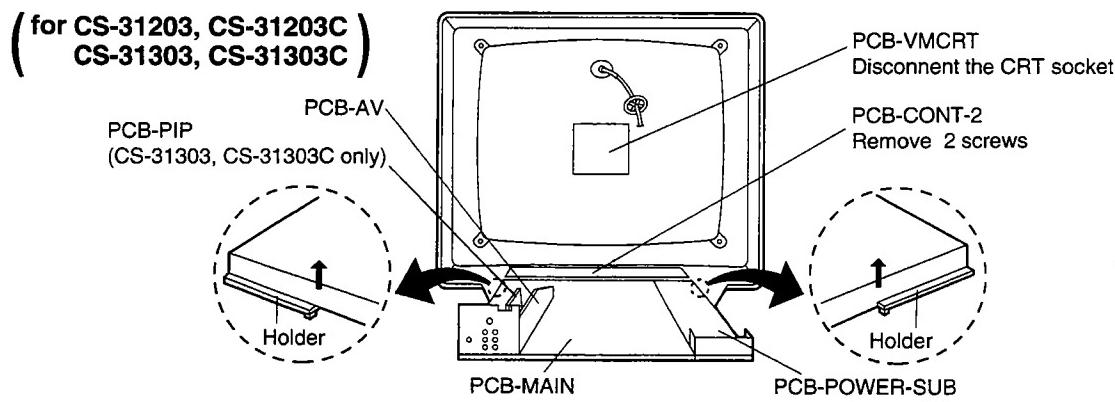
Removal of Back Cover or Back Board

1. Remove 4 screws retaining the rear terminal panel to the back cover.
2. Remove 11 screws retaining the back cover to the front cabinet. (for CS-31203, CS-31203C, CS-31303, CS-31303C, CS-35303). Remove 9 screws retaining the back board to the cabinet. (for CK-35304)

Removal of PCB'S

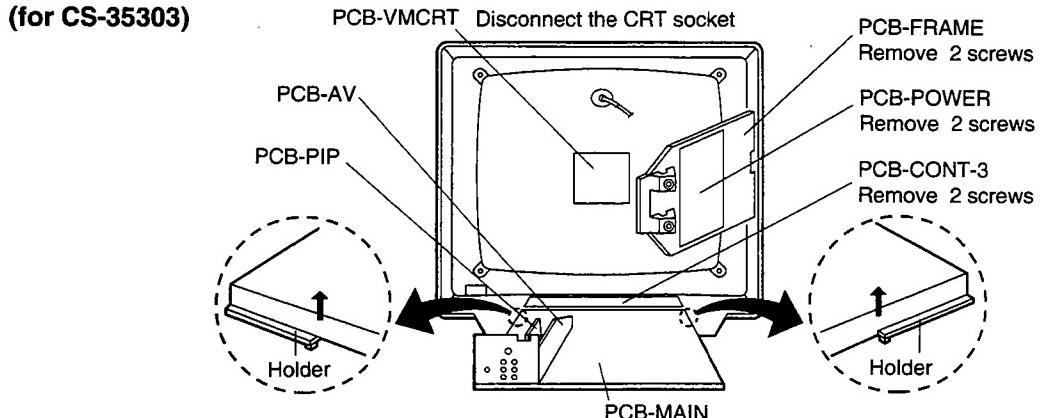
1. Pull out the chassis assembly while lifting the rear of the chassis slightly and release the holders.
(for CS-31203, CS-31203C, CS-31303, CS-31303C, refer to Fig. 2-1)
(for CS-35303 refer to Fig. 2-2) (for CK-35304 refer to Fig. 2-3)

Note : When servicing PCB-PIP and PCB-AV, use extension cords for easier access. (Part No. 859C431O20)
(for CS-31303, CS-31303C, CS-35303, CK-35304)



Chassis assmbly including PCB-MAIN, PCB-AV, PCB-CONT-2, PCB-POWER-SUB and
PCB-PIP (CS-31303, CS-31303C only)

Fig. 2-1



Chassis assmbly including PCB-MAIN, PCB-AV and PCB-CONT-3, and PCB-PIP

Fig. 2-2

(CK-35304)

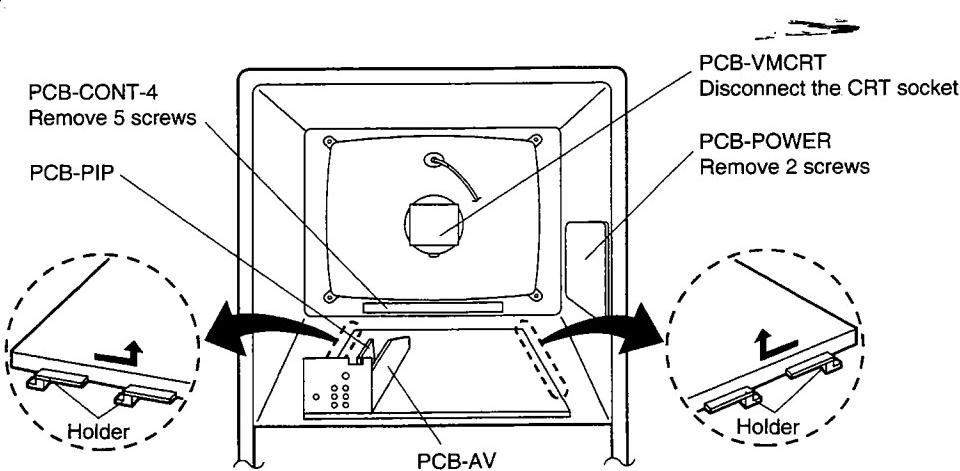


Fig. 2-3

Main chassis servicing position

To service the bottom of a main chassis, refer to Fig. 3-1.

1. Cut stays off on the bottom of the main chassis, refer to Fig. 3-1
2. Insert the stays into the mounting positions as shown in the Fig. 3-2.

[Caution] To prevent mechanical vibration, DO NOT leave the stays in the cabinet.

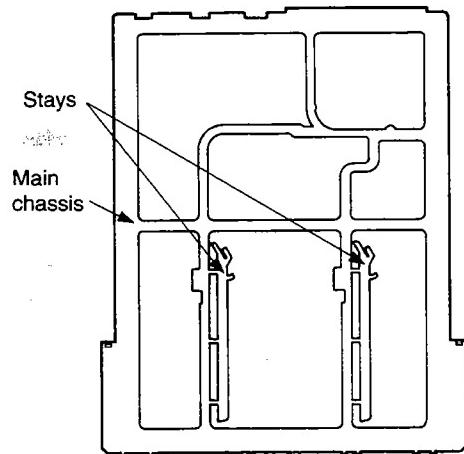


Fig. 3-1

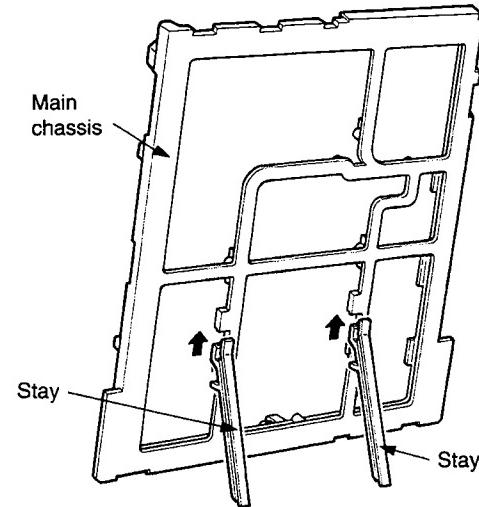


Fig. 3-2

LEAD DRESS

The lead wires to be clamped are listed in the table below.

NOTE : The inner wires are clamped so that they do not come close to heat generating or high voltage parts. After servicing route all wires in their original position.

* The anode lead wire is routed so that no tensile strength is applied to the cap. If the route of the anode lead wire is changed, return it to the initial route shown below.

[for CS-31303, CS-31303C, CS-31203, CS-31203C]

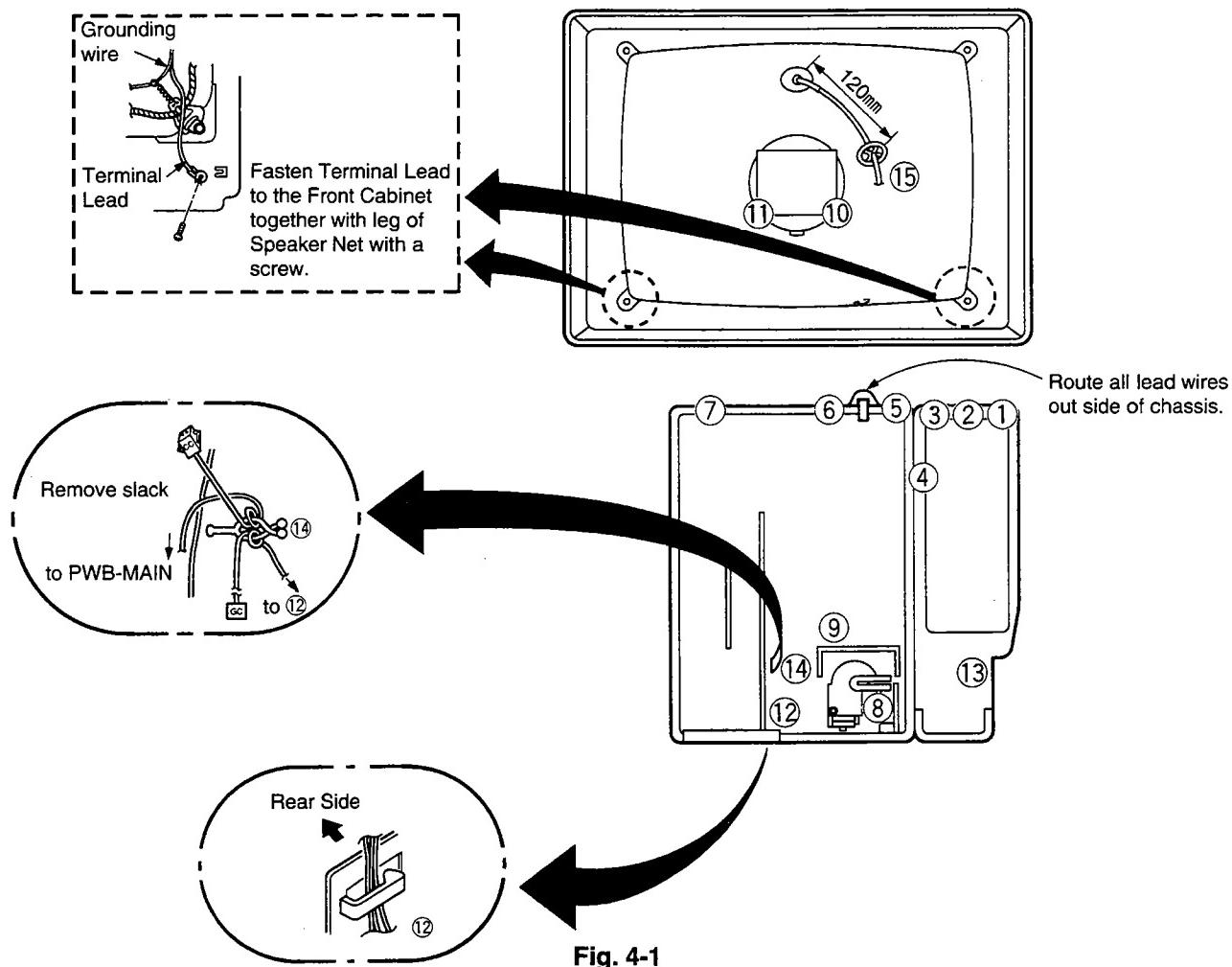


Fig. 4-1

LEAD WIRE	CLAMP
ANODE LEAD WIRE	⑯
DY-LEAD WIRE	⑨
FOCUS LEAD WIRE	⑧
SCREEN LEAD WIRE	⑥
SP391	⑦-⑥-⑤-③-②-①
SP392	⑥
CC	⑯(1 LOOP)
DP	⑬
GA	⑯-⑯(1 LOOP)-⑪

LEAD WIRE	CLAMP
GC	⑯-⑯-⑪
GD	⑯-⑯-⑪
GP	⑯-⑩
KB	④
MY	⑩
PC	①
SK	⑩
SP	⑦

Table 1-1

The lead wires to be clamped are listed in the table below.

NOTE : The inner wires are clamped so that they do not come close to heat generating or high voltage parts. After servicing route all wires in their original position.

* The anode lead wire is routed so that no tensile strength is applied to the cap. If the route of the anode lead wire is changed, return it to the initial route shown below.

* Reverse printed characters indicates aerial clamp.

* Fix the lead wires to the clamps 27 and 28 with silicone gum.

[for CS-35303]

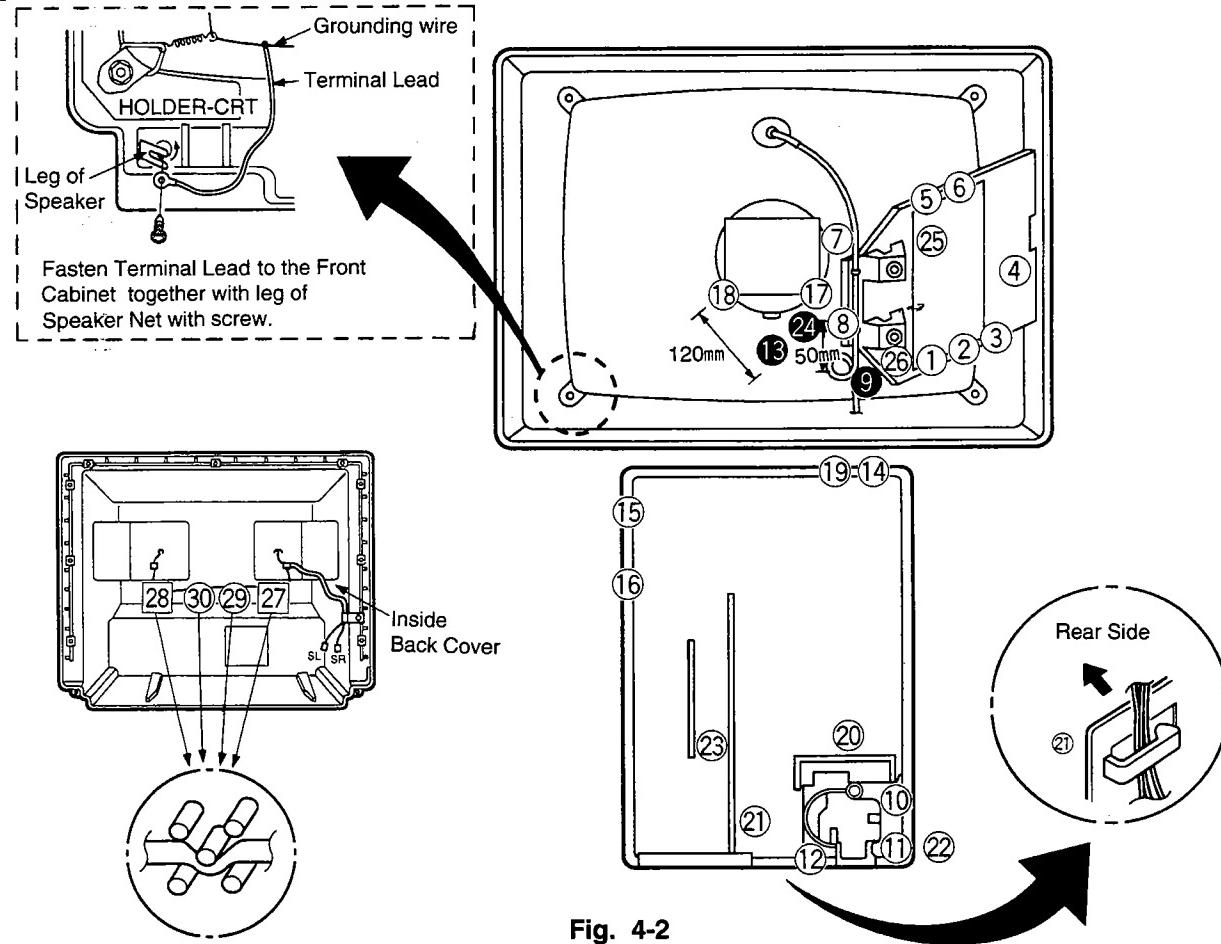


Fig. 4-2

LEAD WIRE	CLAMP
ANODE LEAD WIRE	⑨(1 LOOP)⑧-⑦
DG-COIL	④
DY-LEAD WIRE	④
FOCUS LEAD WIRE	⑫-⑬-⑯
SCREEN LEAD WIRE	⑫-⑬-⑯
SP391	⑮-⑯-⑰
SP392	⑮-⑯
CC	⑳(2 LOOP)
DC	⑤-⑥-⑳
DF	⑪-⑩-⑳
DP	③-⑲
DV	⑳-⑩-⑳
DY	⑳(2 LOOP)
GA	②-⑫-⑬-⑯
GC	④-③-②-①-⑩-⑪-⑫-⑬-⑭

LEAD WIRE	CLAMP
GD	②-⑫-⑬-⑯
GG	⑪-⑫-⑬-⑯
GP	②-⑫-⑬-⑯
HP	⑳-⑩-⑪-⑫-⑬-⑯
KA	⑯-①-②-③-④
KC	⑮-⑯
KD	②-⑫-⑪-⑩-①-②-③-④
KE	⑯-⑮-⑯-⑰-⑱-①-②-③-④
KG	⑳-⑩-⑳
MY	⑰
SK	⑰
SL	⑭-⑯-⑮-⑲-⑳-⑳
SP	⑮
SR	⑮

Table 1-2

The lead wires to be clamped are listed in the table below.

NOTE : The inner wires are clamped so that they do not come close to heat generating or high voltage parts. After servicing route all wires in their original position.

- * The anode lead wire is routed so that no tensile strength is applied to the cap. If the route of the anode lead wire is changed, return it to the initial route shown below.
- * Reverse printed characters indicates aerial clamp.

[for CK-35304]

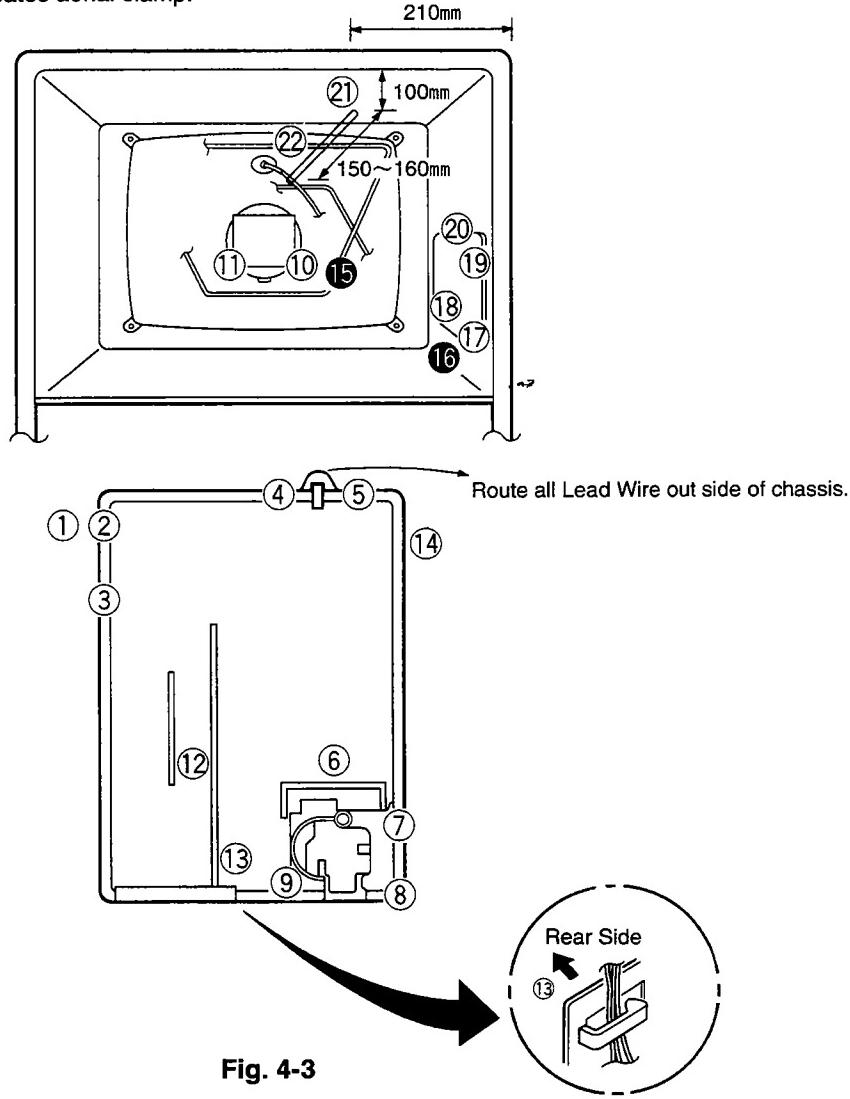


Fig. 4-3

LEAD WIRE	CLAMP
ANODE LEAD WIRE	②
DG-COIL	②
SCREEN LEAD WIRE	⑧-⑨-⑩
SP391	②-④-⑤
SP392	②-①(1 LOOP)
CC	⑫(1 LOOP)
DC	⑩-⑯
DF	⑦-⑧
DV	⑥-⑤-⑭-⑮
DY	⑥(1 LOOP)
F1	⑧-⑨-⑩
F2	⑧-⑨-⑩
GA	⑬-⑪

LEAD WIRE	CLAMP
GC	⑯-⑰-⑯-⑩-⑨-⑪
GD	⑬-⑪
GP	⑬-⑨-⑩
HP	⑯-⑭-⑦-⑧-⑨-⑩
KA	⑯-⑰-⑯-⑭-⑤
KC	①
KD	⑬-⑨-⑧-⑯-⑰
KE	③-②-④-⑤-⑭-⑯-⑰
KG	⑤-⑭-⑯
LA	②-①(1 LOOP)
MY	⑩
SK	⑩

Table 1-3

CRT REPLACEMENT

GENERAL

In some instances, after CRT replacement, Purity and Convergence may require adjustment. If it is required, follow the procedure described in the alignment section of this manual.

CAUTION : Safety goggles must be worn at all times when handling the CRT.

CAUTION : The CRT is extremely sensitive to mechanical shock, therefore care must be taken at all times when handing the CRT.

SUGGESTED TOOLS

The following tool is useful for replacement and final adjustment of the CRT, and are available through the National Parts Department.

1. T-TYPE BOX DRIVER # 859C358020 (Fig. 5)

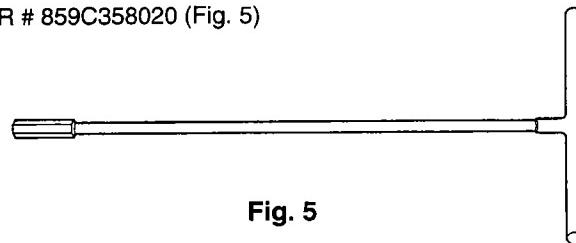


Fig. 5

CRT REPLACEMENT PROCEDURE [for CS-31203, CS-31203C, CS-31303, CS-31303C, CS-35303]

1. Remove the back cover as described under Removal of Back.
2. Carefully discharge the CRT to the ground on PCB-VMCRT.
3. Disconnect the anode connector from the CRT.
4. Remove the PCB-VMCRT and chassis Assembly (PCB-MAIN, PCB-AV, PCB-CONT-2, PCB-POWER-SUB and PCB-PIP) as described in the Removal of PCB's for CS-31203, CS-31203C, CS-31303, CS-31303C.
5. Remove the PCB-VMCRT, Power Frame and chassis Assembly (PCB-MAIN, PCB-AV, PCB-CONT-3 and PCB-PIP) as described in the Removal of PCB's. [for CS-35303]
6. Remove the screw retaining the terminal lead to the front cabinet as described in the LEAD DRESS.
7. Remove the degaussing coil. [for CS-35303 only].
8. Place a thick cushion or slab of foam rubber on the BASE and carefully lie the TV set on its face, taking care not to strike or scratch the face of the CRT. (Fig.6-1)
9. Remove 4 CRT mounting Hex nuts and washers. (Fig. 6-1)
10. Remove the CRT from the cabinet carefully. (Fig. 6-2, Fig. 6-3)
11. Remove the degaussing coil. [for CS-31203, CS-31203C, CS-31303, CS-31303C].
12. Remove the grounding wire.
13. To install the new CRT, reverse the above procedure.

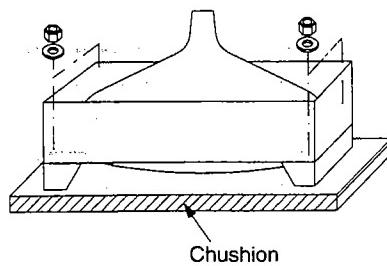


Fig. 6-1

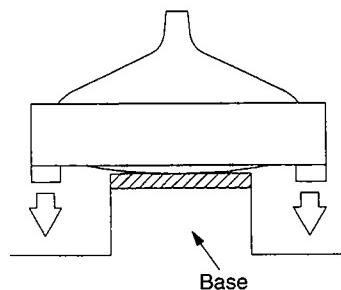


Fig. 6-2

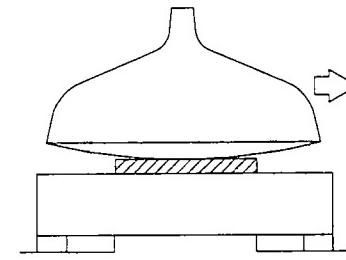


Fig. 6-3

CRT REPLACEMENT PROCEDURE [for CK-35304]

1. Remove the back cover as described under Removal of Back cover.
2. Carefully discharge the CRT to the ground on PCB-VMCRT.
3. Disconnect the anode connector from the CRT.
4. Remove the PCB-VMCRT, PCB-POWER and chassis assembly (PCB-MAIN, PCB-PIP,PCB-AV) as described in the Removal of PCB'S.
5. Remove the degaussing coil.
6. Place a thick cushion or slab of foam rubber on the BASE and carefully lie the TV set on its face, taking care not to strike or scratch the face of the CRT. (Fig. 7-1)
7. Remove 4 CRT mounting Hexnuts and washers (Fig. 7-1)
8. Remove the CRT from the cabinet carefully. (Fig. 7-2, Fig. 7-3)
9. Remove the grounding wire.
10. To install the new CRT, reverse the above procedure.

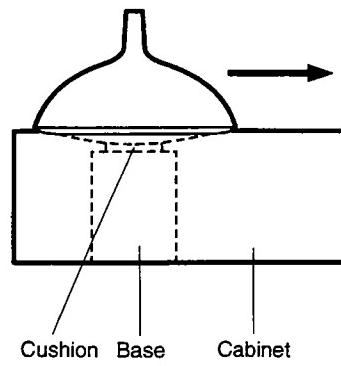
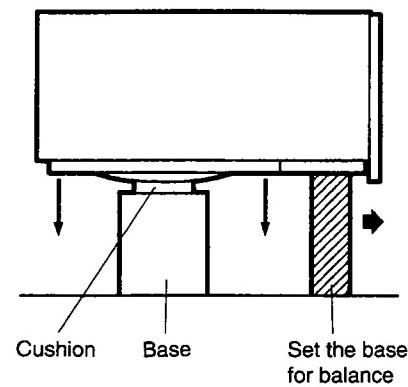
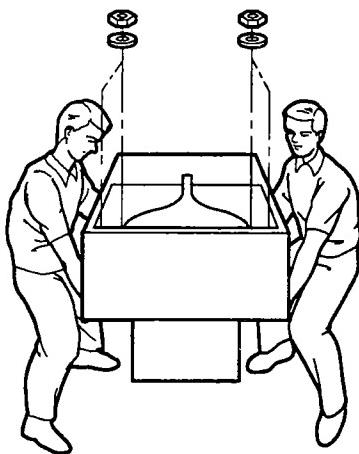


Fig. 7-1

Fig. 7-2

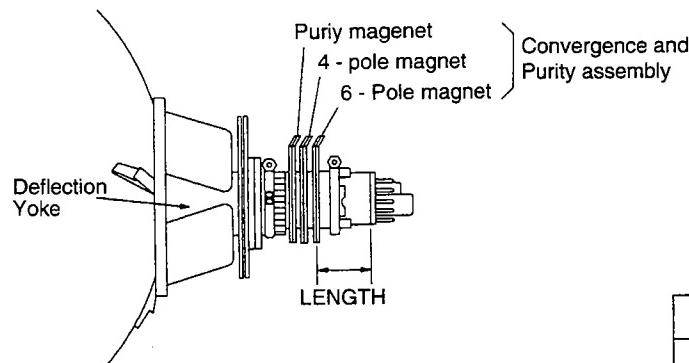
Fig. 7-3

ITC ADJUSTMENT

Perform ITC ADJUSTMENT only for the model CK-35304.

Before adjusting the INTEGRATED TUBE COMPONENT, run the CRT for more than an hour with a monochrome signal applied, to provide normal beam current.

- ITC adjustments should be performed in the following sequence after replacing either the CRT, deflection yoke or purity and convergence magnetic assembly.
- When not replacing parts, perform only the necessary adjustments.
- Installation
 - a). Install the deflection yoke on the neck of the CRT, fully forward against cone.
 - b). Place the purity and convergence assembly on the neck of the CRT so that the distance between the 6-pole magnet and the base of the tube ia as indicated in Table. 1, then tighten the screw by hand.



MODEL	LENGTH
CK-35304	1.93±0.08 inches

Table. 1

Preliminary Adjustment

- Degauss the front and rear of the CRT, CRT holder, and the front and sides of the cabinet. Don't allow the degaussing coil near to the deflection yoke, purity and convergence magnetic assembly.
(Insufficient degaussing can prevent suitable color purity adjustment.)
- Run the CRT for more than an hour with a white raster signal, to provide normal beam current.
- Make sure that all electrical adjustments have been performed.
- Align the 4-pole, 6-pole and purity magnets to minimum magnetic strength (tabs together).

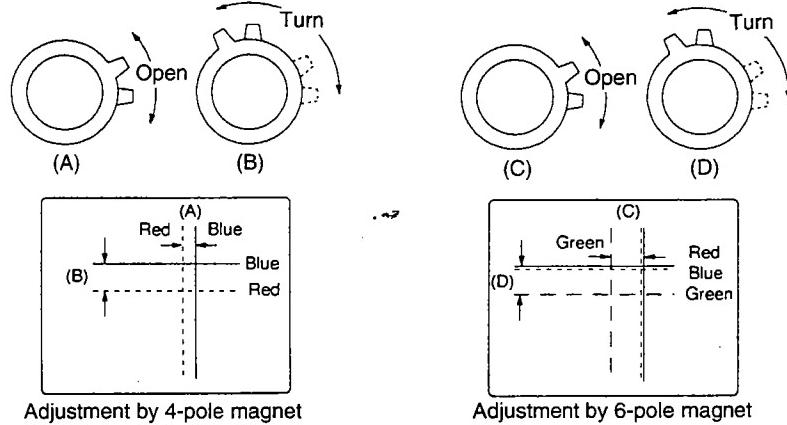
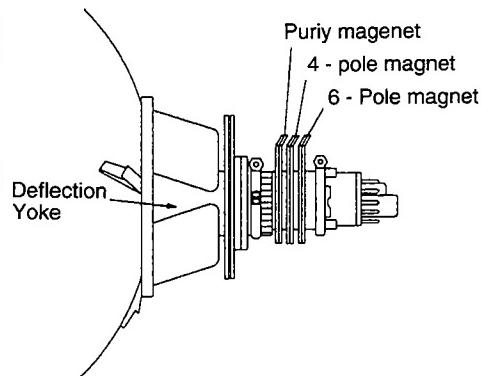
1. Purity	Adjustment purpose	Insure the R, G and B beam hit the correct fluorescent materials.
	Symptom when incorrectly adjusted	Incorrect color in areas of the picture.

Input signal	VIDEO signal (yellow raster)	1. Supply a VIDEO signal (yellow raster). 2. With the deflection yoke positioned fully forward, adjust the purity magnet so that the yellow bar is at the center of the screen with normal vertical centering. 3. Slide the deflection yoke slowly backwards to produce a uniform yellow raster. 4. Tighten the deflection yoke in the position. 5. Switch the input signal from red to green to blue. Confirm no discoloration appears in each of the colors. If discoloration is present, re-adjust steps 1 through 4.
Input terminal	VIDEO IN terminal	

2. Static Convergence		Adjustment purpose	To correct any misconvergence in the center of the picture.
Symptom when incorrectly adjusted		Color edging of objects in the main picture area.	

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

1. Supply a VIDEO signal (crosshatch).
2. Set the BRIGHTNESS and CONTRAST controls to center position.
3. Adjust the angle between the tabs of the 4-pole magnet and the angular position to converge the "B" and "R" beams on the screen.
4. Adjust the angle between the tabs of the 6-pole magnet and the angular position to converge the "B" and "R" beams on the "G" beam at the center of the screen.
5. Make sure that purity in each color "R", "G" and "B" is maintained. If necessary, repeat item 1 (Purity) to item 2 (Static Convergence).



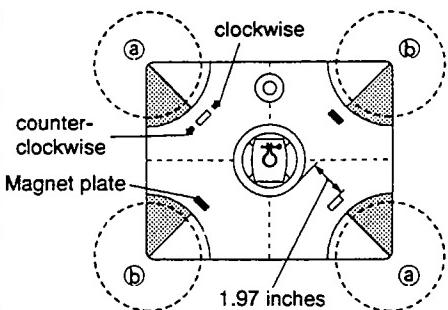
Note: With both 4-pole and 6-pole magnets, converge the vertical line with the angle between tabs and the horizontal line with angular rotation of both tabs together.

3. Screen corner landing compensation		Adjustment purpose	To correct divergence in the corners of the screen.
Symptom when incorrectly adjusted		Color edging appears at the corners of a screen.	

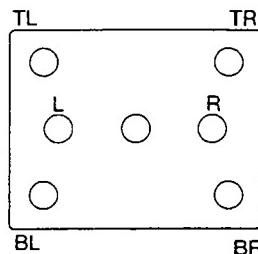
Input signal	VIDEO signal (red raster)
Input terminal	VIDEO IN terminal

- * The adjustments described below are for correcting inward color beam divergence at the corners of the screen.
- Reverse placement of the magnet for correcting outward divergence.

1. Degauss the unit with its own degauss system.
Do not use any degaussing coil other than the built-in degaussing.
2. Supply a VIDEO signal (red raster).
3. Make sure that only red appears at the corners of the screen.
If other colors appear, attach a magnet (Up to 3 pieces at a position) on the funnel of the CRT so that the undesirable color disappears (Part No. of magnet: 461D033O20).
 - A). When an undesirable color appears in the area ④, shown in the figure, set the face of magnet plate to white marker side and attach the magnet plate on the funnel of the CRT.
 - B). When an undesirable color appears in the area ⑤, shown in the figure, set the magnet plate to the opposite side of white marker, and attach the magnet plate on the funnel of the CRT.
- Note:** The magnet plate will distort raster and disturb the convergence system. Do not place a magnet plate closer than 1.97 inches to the bobbin of the deflection yoke.
4. If an undesirable color appears in the area indicated by [red box], move the magnet plate counter-clockwise until the color disappears.
If an undesirable color appears in the area indicated by [white box], move the magnet plate clockwise until the color disappears.



To be continued the next page.



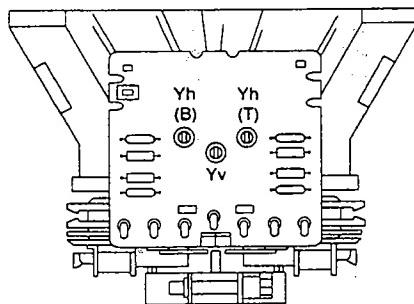
Check Point	Best landing	Outward divergence	Inward divergence
R.TL.BR			
L.TL.BL			

Check point for beam landing

5. After correction, degauss the set and then check corners of the screen.
If discoloration exists, fine adjust the magnet for that corner.

4. Yh correct	Adjustment purpose	To correct the color divergence of R, G and B vertical lines at the top and bottom of the picture.
	Symptom when incorrectly adjusted	Color edging of vertical lines at the top and bottom of the picture.

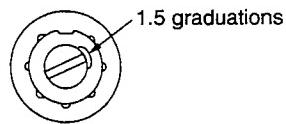
Input signal	VIDEO signal (crosshatch)	* Before adjusting, be sure to tighten the deflection yoke in position.
Input terminal	VIDEO IN terminal	<ol style="list-style-type: none"> Supply a VIDEO signal (crosshatch). When color beams do not converge along the Y axis as shown in the figure below, turn adjustment Yh (T), on the top of the deflection yoke counter-clockwise, and turn Yh (B) clockwise until the beams converge at the top and bottom. Note that the potentiometer Yh (T) affects the beams at top of the screen while the Yh (B) at the bottom. [Displacement amount: +1.8mm to -1.2mm] Reverse counter-clockwise and clockwise when the beam divergence is opposite to the example as shown below.



Direction of divergence	Adjusting potentiometers, Yh (T) and Yh (B)
<p>R B</p> <p>Yh</p>	<p>Red beam moves left</p>

To be continued the next page.

- * At their full travel, the Yh potentiometers can move the beams approx. 4.0mm.
Do not turn them more than 1.5 graduation.



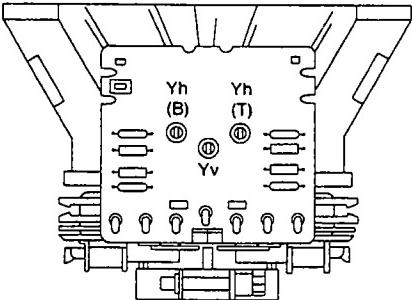
5. Yv correct	Adjustment purpose	To correct color divergence of R, G and B horizontal lines at the top and bottom of the picture.
	Symptom when incorrectly adjusted	Color edging around horizontal line at the top and bottom of the picture.

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

- * Before adjusting, be sure to tighten the deflection yoke in position.
- 1. Supply a VIDEO signal (crosshatch).
- 2. When horizontal lines do not converge at the top and bottom of the screen, turn the adjusting potentiometer, Yv, on the top of the deflection yoke, clockwise.

[Displacement amount: $\pm 1.0\text{mm}$]

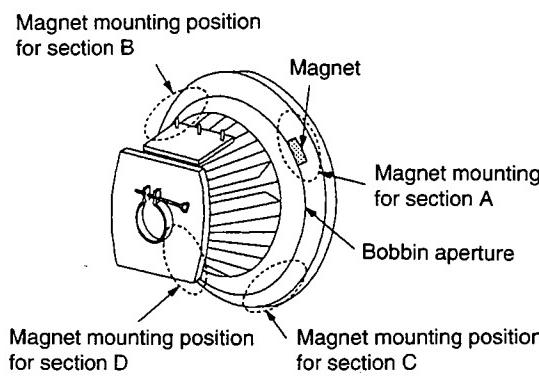
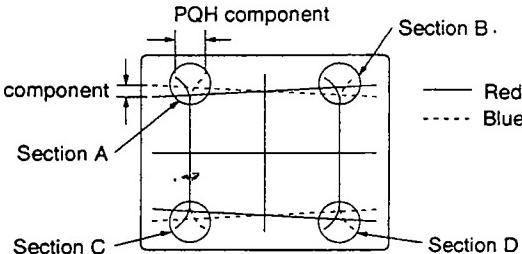
Reverse clockwise as counter-clockwise when the beam divergence is opposite to the example as shown below.

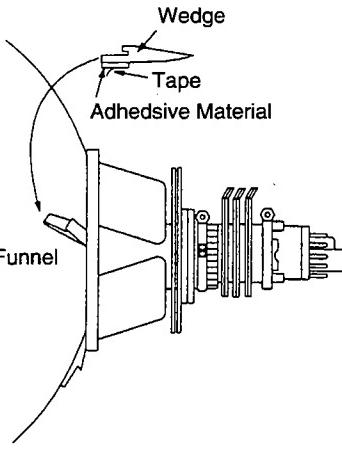
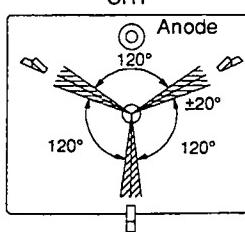


Direction of divergence		Adjusting potentiometers
Yv	R B B R	Red beam moves inward Red beam moves outward

6. Xv correct		Adjustment purpose	To correct color divergence of R, G and B horizontal lines at the sides of the picture.						
		Symptom when incorrectly adjusted	Color edging around horizontal lines at the sides of the picture.						
Input signal	VIDEO signal (crosshatch)	* Before adjusting, be sure to tighten the deflection yoke in position.							
Input terminal	VIDEO IN terminal	1. Supply a VIDEO signal (crosshatch). 2. When horizontal lines do not converge at left and right sides of the screen, adjust vertical cross (Xv) with the horizontal differential coil as shown below.							
			<table border="1"> <thead> <tr> <th>Type of Misconvergence</th> <th>Core position</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Type of Misconvergence	Core position				
Type of Misconvergence	Core position								

7. Xh correct		Adjustment purpose	To correct color divergence of R, G and B vertical lines at the sides of the picture.						
Symptom when incorrectly adjusted			Color edging at the sides of the picture.						
Input signal	VIDEO signal (crosshatch)		* Before adjusting, be sure to tighten the deflection yoke in position.						
Input terminal	VIDEO IN terminal		1. Supply a VIDEO signal (crosshatch). 2. When beam lines do not converge at left and right sides of the screen, adjust horizontal cross (Xh) with a magnet plate as shown below (Part No. of magnet: 412D064O10).						
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">Type of Misconvergence</th> <th style="text-align: center; padding: 5px;">Stick a magnet to the position illustrated below</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;"> </td> <td style="text-align: center; padding: 10px;"> </td> </tr> <tr> <td style="text-align: center; padding: 10px;"> </td> <td style="text-align: center; padding: 10px;"> </td> </tr> </tbody> </table>		Type of Misconvergence	Stick a magnet to the position illustrated below				
Type of Misconvergence	Stick a magnet to the position illustrated below								

8. Convergence at screen corners		Adjustment purpose	To correct convergence at the corners of the picture.
		Symptom when incorrectly adjusted	Color edging in the corners.
Input signal	VIDEO signal (crosshatch)	1. Supply a VIDEO signal (crosshatch).	
Input terminal	VIDEO IN terminal	2. If convergence is poor at corners, place a magnet at the aperture of the deflection yoke bobbin.	The magnet mounting position corresponds with each respective corner as shown below (Part No. 461D017O10).
3. Position the magnet with adhesive so the PQH and PQV components are minimized.			
  <p>Magnet mounting position for section B Magnet Magnet mounting position for section A Bobbin aperture Magnet mounting position for section D Magnet mounting position for section C</p> <p>PQH component PQV component Section B Section A Section C Section D Red Blue</p> <p>Pattern seen from face side of CRT</p>			

9. Wedge position		Adjustment purpose	Secure deflection yoke to the funnel of the CRT.
		Symptom when incorrectly adjusted	Convergence may vary.
Input signal	—	1. Insert 3 wedges so there is no yoke movement, as shown below.	
Input terminal	—	2. After positioning the wedges, gently turn up the end of the wedge and strip the tape from the rear to expose the adhesive material, then adhere to the funnel of the CRT.	
3. Apply silicone gum (Part No. 859D106O20) between wedges and the funnel of the CRT.			
  <p>Wedge Tape Adhesive Material Funnel</p> <p>CRT Anode 120° ±20° 120°</p>			
<p>Note: Do not use a wedge that has already been used.</p>			

ELECTRICAL ADJUSTMENTS

Perform only the adjustments required.

If proper equipment is not available, do not attempt an alignment.

■ Measuring equipment and Jigs

- Oscilloscope (Unless otherwise specified, use 10:1 probes)
- Signal generator
- Frequency counter
- Multiplex audio signal generator
- Direct current milliammeter
- Electrical tools
- Cable extension kit (Part No. 859C431O20)

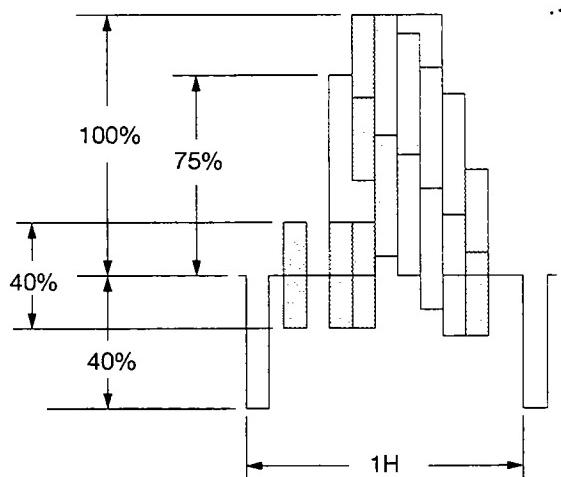
■ TEST signal

1) Monoscope signal

When you have no monoscope signal source for adjustment, connect the unit to a VCR and play an alignment tape (Monoscope).

2) Color bar signal

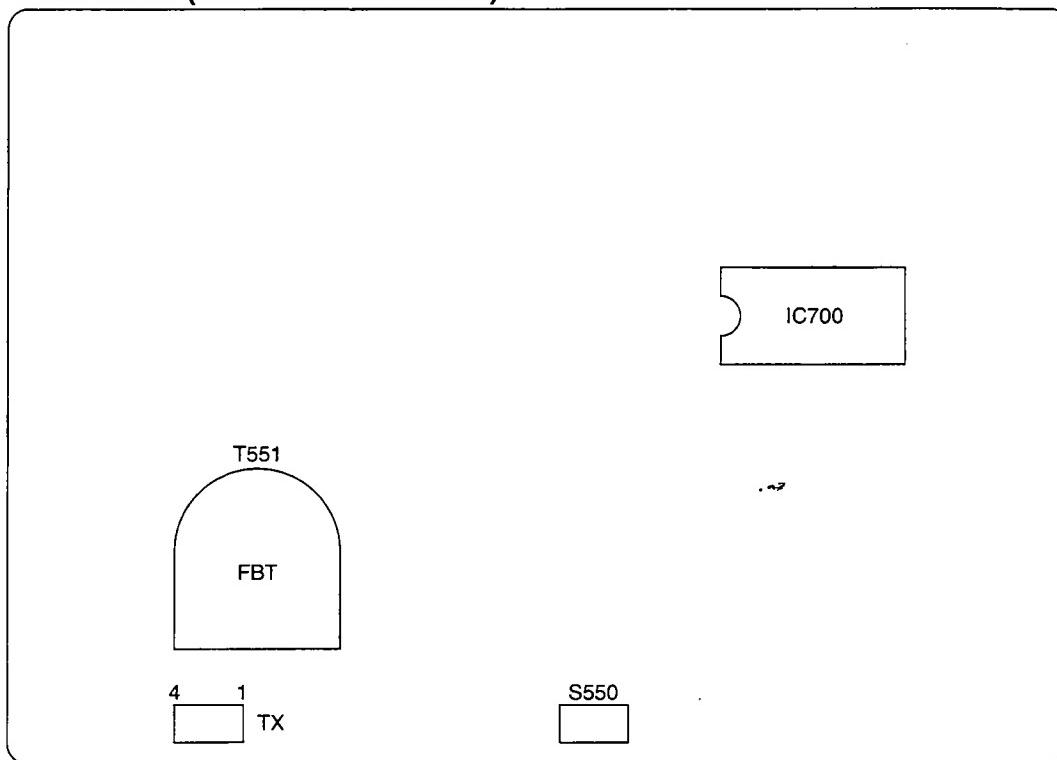
In this manual, unless otherwise specified, use the color bar signal specified, below.



NTSC
Split-Field Color Bars (with 100% window)

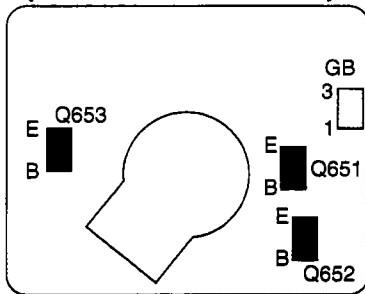
Location of Test Points and Adjustments

PCB-MAIN (COMPONENT SIDE)

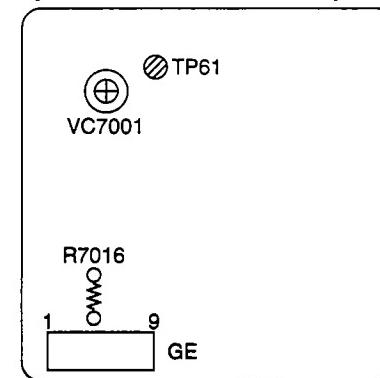


FRONT

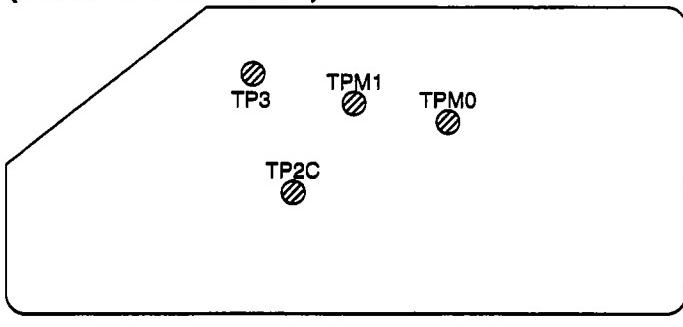
PCB-VMCRT (COMPONENT SIDE)



PCB-PIP (COMPONENT SIDE)



PCB-AV (COMPONENT SIDE)



Initial Set up

Follow the steps below for the initial set up.

1. Set the receiver to "TV mode".
2. Press the "MENU" button on a remote hand unit one time to select the "MENU" display.
3. Press the buttons "2", "3", "5", and "8" successively to select the "OPTION MENU" display.
4. Press the "ADJUST" button to select "Initial".
5. Press the "ENTER" button.

Note : At this time, channel 3 is selected.

6. Perform steps 2 and 3 above to display "OPTION MENU" screen.
7. Use the "ADJUST" button and "ENTER" button to set "OPTION MENU" as shown in the table below.
8. Press the "MENU" button twice to return to normal viewing.

OPTION MENU

Initial	System 1A : On
E ² RESET	CCD : On
Hotel : Off	Auto clock: On
	Call letr : On
PIP : <u>On</u>	Net name : On
	Prog name : On
Montr. fix : On	Prog descr : On
Auto turn : Off	
Antenna : 2	
Input : 2	

* Set this condition to "OFF" for models CS-31203 and CS-31203C.

CAUTION : DO NOT select "E²RESET" and press "ENTER" button.

If pressed, all the data of E²PROM is changed to the initial data value, then readjustment of all the data relating to the E²PROM must be performed.

Initial Setting Condition

Initial Setting Item	Initial Setting Condition	Initial Setting Item	Initial Setting Condition
INPUT	TV	PIP SOURCE	TV
RECEIVE CHANNEL	003 CH	PIP POSITION	—
TV/CATV	CATV	VIDEO MUTE	OFF
Q. V.	003 CH	RENAME THE INPUTS	ALL LABEL CLEAR
CHANNEL MEMORY	ALL CH (0.0)	POWER RESTORE	OFF
Lock the TV	OFF	AUTO CLOCK	OFF
LOCK CODE	FFFFH	A / V NETWORK	OFF
VOLUME	21 Step / 64	SELECT LANGUAGE	English
AUDIO FUNCTIONS		ADVANCED PIP	TV Still
TV Listen to	STEREO	OPTION MENU	
TV Bass	50%	Initial	—
TV Treble	50%	E ² reset	—
TV Balance	50%	Hotel	OFF
TV Surround	OFF	PIP	ON
TV Speaker	ON	Montr. fix	OFF
VIDEO FUNCTIONS		Auto turn	OFF
TV Tint	50%	Antenna	1
TV color	50%	Input	1
TV Contrast	50%	System 1A	OFF
TV Brightness	50%	CCD	ON
TV Sharpness	50%	Auto clock	ON
TV Color temp	High	Call letr	ON
TV CC	When muting	Net name	ON
		Prog name	ON
		Prog descr	ON

Circuit Adjustment Mode

On this model, the following adjustment items may only be performed using the remote hand unit.

item 1 (SAP VCO) ~ item 18 (Sub cont), item 21 (Character position), item 23 (PIP chroma gain), item 24 (PIP Sub TINT)

To perform these adjustments, use the following procedure to activate the circuit adjustment mode.

1. Activating the circuit adjustment mode

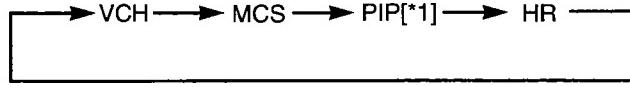
1. Press the "MENU" button on a remote hand unit. (The "MENU" display will appear.)
2. Press the buttons "2", "3", "5", and "7" in that order. (The screen will change to the circuit adjustment mode.)
If not changed to the circuit adjustment mode, repeat the steps 1 and 2 again.

2. Selection of adjustment functions and adjustment items

To select an adjustment item in the circuit adjustment mode, select first the adjustment function, that includes the specific adjustment item to be selected, and next select the adjustment item.

Refer to the following pages for the listing of adjustment functions and adjustment items.

1. Press the "AUDIO" button on a remote hand unit to select an adjustment function. Each time the button is pressed, the adjustment function changes in the following sequence.



*1 : "PIP" is not displayed for CS-31203 and CS-31203C.

2. Press the "VIDEO" button to select a specific adjustment item. The adjustment item number increases, each time the "VIDEO" button is pressed.

3. Changing data

After selecting an adjustment item, use the "ADJUST UP/DOWN" button to change adjustment data.

- If "ADJUST DOWN" button is pressed, the adjustment data decreases.
- If "ADJUST UP" button is pressed, the adjustment data increases.

4. Saving of adjustment data

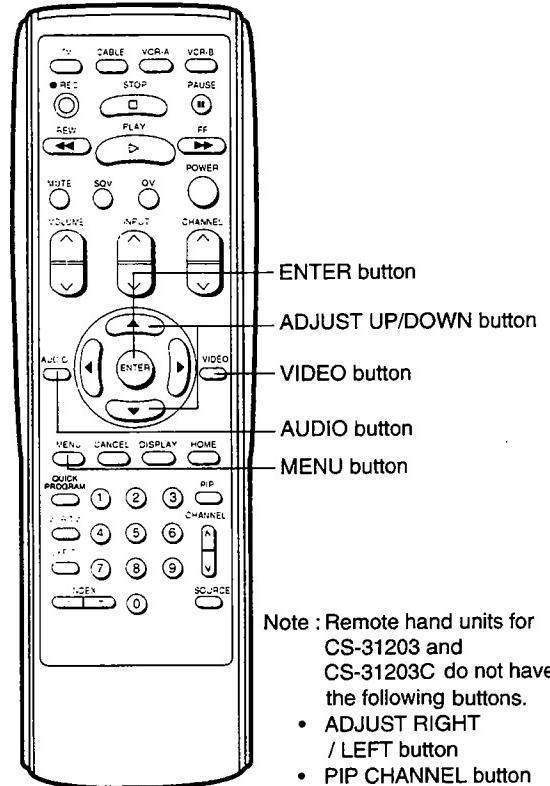
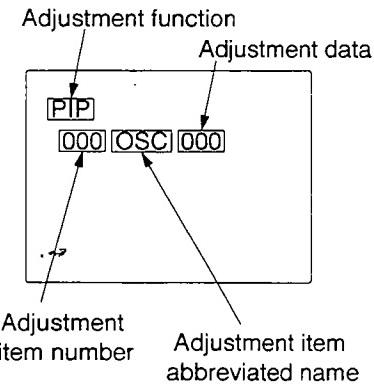
Press the "ENTER" button to save the adjustment data in memory. The display of characters goes red for approx. two seconds in this step.

Note : If the circuit adjustment mode is terminated without pressing the "ENTER" button, changes in adjustment data are not saved.

5. Terminating the circuit adjustment mode

Press the "MENU" button on the remote hand unit twice to terminate the circuit adjustment mode.

Note : The circuit adjustment mode can be also terminated by turning the power OFF.



Note : Remote hand units for CS-31203 and CS-31203C do not have the following buttons.

- ADJUST RIGHT / LEFT button
- PIP CHANNEL button
- PIP SOURCE button
- INDEX button

List of Adjustment Functions and Adjustment Items

Note : The values with the description of "Fixed Value" in the NOTE column should not be changed.

Note : The "initial data" is the initial value of that adjustment. The initial data may not be correct for the normal performance of your specific TV set.

Note : The E²PROM stores the adjustment data, when replaced the micro computer will automatically write the initial data values in the new E²PROM. Initial data with an ★mark will differ from that given in the table.

After replacing E²PROM, or when selecting E²RESET in OPTION MENU, readjust the data with ★marks to the value listed below.

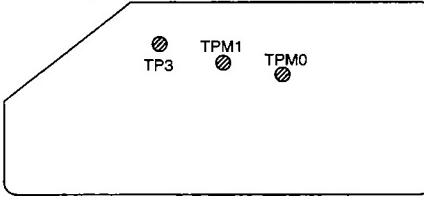
Note : When ICs for specific adjustment functions are replaced, the micro computers automatically writes the data value is stored in the E²PROM.

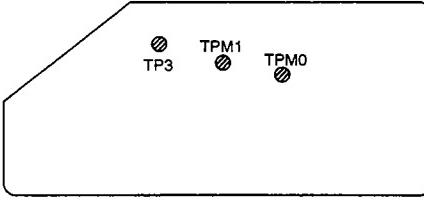
Function Display		VCH			IC201
Adjustment Item Number	Adjustment Abbreviated Name	Adjustment Name	Adjustment Range	Initial Data	Note
0	COL	Color Control	0~127	80	
1	TNT	TINT Control	0~127	50	
2	BRT	Brightness Control	0~255	135	
3	CNT	Contrast Control	0~127	70	
4	SHP	Sharpness Control	0~127	21	
5	CTR	R-CUT OFF	0~255	255	
6	CTG	G-CUT OFF	0~255	255	
7	CTB	B-CUT OFF	0~255	255	
8	DHR	R-Drive	0~127	63	
9	DHB	B-Drive	0~127	63	
10	VHT	Vertical Height	0~127	63	
11	PAM	E-W Parabora(PCC-Amp)	0~63	32	
12	HWD	Horizontal Width	0~63	32	
13	YDL	Y-Delay Line Selection	0~1	0	Fixed value
14	DL2	Aperture Control Delay Volume Selection	0~1	1	Fixed value
15	DCT	DC Transmission Volume Selection	0~1	1	Fixed value
17	AFC	AFC1 Gain Selection	0~3	★3	Fixed value
19	SVS	Service Switch	0~1	1	Fixed value
26	CRS	R-Cut Off Switch	0~3	1	Fixed value
28	DRR	R-Drive Switch	0~1	1	Fixed value
29	DRB	B-Drive Switch	0~1	1	Fixed value
30	CBS	B-Cut Off Switch	0~3	1	Fixed value
33	DL1	Preshoot/Overshoot	0~7	★0	Fixed value
34	PED	Black Expansion Gain	0~15	7	Fixed value
35	GMA	White γ Level	0~15	★15	Fixed value
36	GMG	White γ Gain	0~15	★15	Fixed value
37	BES	Black Expansion Slice Position	0~7	4	Fixed value
38	R-Y	Demodulation Axis R-Y	0~31	★16	Fixed value
39	B-Y	Demodulation Axis B-Y	0~63	★18	Fixed value
40	G-Y	G-Y Ratio Selection	0~3	1	Fixed value
41	WHC	White Character Correction	0~15	8	Fixed value
42	WHV	White Character Slice Position	0~15	8	Fixed value

Function Display		VCH	IC201		
Adjustment Item Number	Adjustment Abbreviated Name	Adjustment Name	Adjustment Range	Initial Data	Note
43	HPH	H-Center Position	0~31	16	
44	VSC	Vertical S	0~63	32	
45	VLR	Vertical Lineality	0~63	32	
46	VSF	Vertical Position	0~2	1	
47	PPH	PCC Phase	0~63	32	
48	PC1	PCC Corner 1	0~7 [~]	4	
49	PC2	PCC Corner 2	0~7	4	
50	VCM	Vertical EHT	0~15	8	
51	HCM	Horizontal EHT	0~15	7	

Function Display		MCS	IC3A0		
Adjustment Item Number	Adjustment Abbreviated Name	Adjustment Name	Adjustment Range	Initial Data	Note
0	PVC	SAP VCO	0~63	32	
1	TVC	Stereo VCO	0~63	32	
2	INP	Input Level	0~63	32	
3	FIL	Filter	0~63	63	
4	LSP	Low Sound Separation	0~63	32	
5	HSP	High Sound Separation	0~63	32	

Function Display		PIP	IC7002		
Adjustment Item Number	Adjustment Abbreviated Name	Adjustment Name	Adjustment Range	Initial Data	Note
0	TINT	Tint	0~63	32	
1	COLR	Color Saturation	0~63	32	
2	DECD	Color Reset	0~1	0	Fixed value
3	SYNC	Sub Picture Sync Separation Threshold	0~7	★ 1	Fixed value
4	RVS	RVS	0~1	0	Fixed value
5	BG-Y	Back Ground Luminance Level	0~15	★10	Fixed value
6	BSTB	Burst with Background displayed	0~63	★10	Fixed value
7	MVW	Sub Picture Macro Vision	0~3	0	Fixed value
8	CRTN	Sub Picture Tint Offset	0~3	1	Fixed value
9	VXA	Sub Picture Vertical Position	91~255	110	Fixed value
10	HXAO	Sub Picture Horizontal Position	17~139	126	Fixed value
11	ADJ9	Delay Volume between Sub Picture and Frame (1/9)	0~15	7	Fixed value
12	YDL9	Sub Picture Y Delay Volume (1/9)	8~29	★14	Fixed value
13	HPX9	Writing System Horizontal Position (1/9)	0~255	54	Fixed value
14	VYA9	Sub Picture Height (1/9)	0~255	188	Fixed value
15	HYA9	Sub Picture Width (1/9)	6~255	60	Fixed value
16	ADJ6	Delay Volume between Sub Picture and Frame (1/16)	0~15	7	Fixed value
17	YDL6	Sub Picture Y Delay Volume (1/16)	8~29	14	Fixed value
18	HPX6	Writing System Horizontal Position (1/16)	0~255	104	Fixed value
19	VYA6	Sub Picture Height (1/16)	0~255	206	Fixed value
20	HYA6	Sub Picture Width (1/16)	6~255	46	Fixed value
21	VXAM	Sub Picture Vertical Position (Multi)	207~255	229	Fixed value
22	HXAM	Sub Picture Horizontal Position (Multi)	15~150	32	Fixed value
23	VXBM	Sub Picture Vertical Position (Multi)	200~239	238	Fixed value

[Multi Channel Sound circuit] 1. SAP VCO		Adjustment purpose	Set the reference frequency for the SAP detection circuit.																					
		Symptom when incorrectly adjusted	No reception of SAP broadcasting.																					
Measuring instrument	Frequency counter																							
Test point	TP3																							
EXT trigger	---																							
Measurement range	---																							
Input signal	RF signal (monoral sound)																							
Input terminal	RF IN terminal																							
			<ol style="list-style-type: none"> Supply an RF signal (monoral sound 400Hz 100%MOD). Connect TPM0 to ground through an electrolytic capacitor (10uF, 50V or more), as shown below. Connect TPM1 to ground through an resistor (1/4W 820KΩ). Observe the frequency at TP3. Activate the circuit adjustment mode. (refer to page 18) Set the adjustment function to "MCS". ("AUDIO" button) Set the adjustment items shown in the list below to the initial data value. ("VIDEO" and "ADJUST"buttons) Select adjustment item "0 PVC". ("VIDEO" button) Set the adjustment data so that the frequency is $78.67 \pm 0.40\text{kHz}$. ("ADJUST" button) Write the adjustment data into memory. (Press "ENTER") Terminate the circuit adjustment mode. (press "MENU" twice) 																					
Note : Adjustment item 2 (Stereo VCO) must be performed immediately after this adjustment.																								
PCB-AV (COMPONENT SIDE)																								
		<table border="1"> <thead> <tr> <th>Adjustment item number</th> <th>Adjustment item</th> <th>Initial Data</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>PVC</td> <td>32</td> </tr> <tr> <td>1</td> <td>TVC</td> <td>32</td> </tr> <tr> <td>2</td> <td>INP</td> <td>32</td> </tr> <tr> <td>3</td> <td>FIL</td> <td>63</td> </tr> <tr> <td>4</td> <td>LSP</td> <td>32</td> </tr> <tr> <td>5</td> <td>HSP</td> <td>32</td> </tr> </tbody> </table>		Adjustment item number	Adjustment item	Initial Data	0	PVC	32	1	TVC	32	2	INP	32	3	FIL	63	4	LSP	32	5	HSP	32
Adjustment item number	Adjustment item	Initial Data																						
0	PVC	32																						
1	TVC	32																						
2	INP	32																						
3	FIL	63																						
4	LSP	32																						
5	HSP	32																						

[Multi Channel Sound circuit] 2. Stereo VCO		Adjustment purpose	Set the reference frequency for the multiplex IC oscillator.
		Symptom when incorrectly adjusted	No STEREO reception.
Measuring instrument	Frequency counter		* This adjustment must follow item 1 (SAP VCO).
Test point	TP3		<ol style="list-style-type: none"> Refer to the steps 1 through 6 in the item 1 (SAP VCO) for the connection and setting of measuring instruments, etc. Select adjustment item "1 TVC". ("VIDEO" button) Set the adjustment data so the frequency is $15.73 \pm 0.08\text{KHz}$. ("ADJUST" button) Write the adjustment data into memory. (Press "ENTER") Terminate the circuit adjustment mode. (Press "MENU" twice) Remove the resistor from TPM1 and the electrolytic capacitor from TPM0.
EXT trigger	---		
Measurement range	---		
Input signal	RF signal (monoral sound)		
Input terminal	RF IN terminal		
Note : Adjustment item 3 (Input level) must be performed immediately after this adjustment.			
PCB-AV (COMPONENT SIDE)			
			

[Multi Channel Sound circuit] 3. Input level	Adjustment purpose	Set the level of the input signal for the multi channel sound circuit.
	Symptom when incorrectly adjusted	Distorted sound during an MCS broadcast.

Measuring instrument	Oscilloscope	* This adjustment must follow item 2(Stereo VCO). 1. Supply an RF signal (monoral sound 400Hz 100%MOD). 2. Observe the waveform at TP3. 3. Activate the circuit adjustment mode. (refer to page 18) 4. Set the adjustment function to "MCS". ("AUDIO" button) 5. Select adjustment item "2 INP". ("VIDEO" button) 6. Set the adjustment data so that the amplitude of the waveform is 1.41 ± 0.03 Vp-p. ("ADJUST" button) 7. Write the adjustment data into memory. (Press "ENTER") 8. Terminate the circuit adjustment mode. (Press "MENU" twice)
Test point	TP3	
EXT trigger	---	
Measurement range	DIV 50mV TIM 2ms	
Input signal	RF signal (monoral sound)	
Input terminal	RF IN terminal	Note : Adjustment item 4 (Filter) must be performed immediately after this adjustment.

PCB-AV (COMPONENT SIDE)



[Multi Channel Sound circuit] 4. Filter	Adjustment purpose	Filter for pilot signal.
	Symptom when incorrectly adjusted	Poor S/N ratio of signal in STEREO and SAP modes.

Measuring instrument	Oscilloscope	* This adjustment must follow item 3(Input level). 1. Supply an RF signal. (Stereo Pilot signal but sound signal). 2. Observe the waveform at TP3. 3. Activate the circuit adjustment mode. (refer to page 18) 4. Set the adjustment function to "MCS". ("AUDIO" button) 5. Select adjustment item "3 FIL". ("VIDEO" button) 6. Set the adjustment data for minimum amplitude of the waveform. ("ADJUST" button) Decrease the data from 63, and set the data to the value where the first minimum amplitude is obtained.
Test point	TP3	
EXT trigger	---	
Measurement range	DIV 10mV TIM 2ms	
Input signal	RF signal (stereo sound)	
Input terminal	RF IN terminal	7. Write the adjustment data into memory. (Press "ENTER") 8. Terminate the circuit adjustment mode. (Press "MENU" twice) Note : Adjustment item 5 (separation) must be performed immediately after this adjustment.

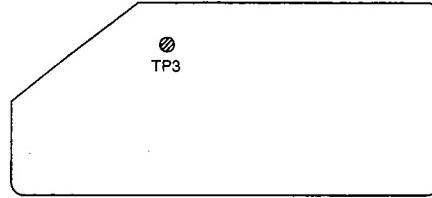
PCB-AV (COMPONENT SIDE)



[Multi Channel Sound circuit]	Adjustment purpose	Adjust right and left separation.
5. Separation	Symptom when incorrectly adjusted	Poor or no stereo separation.

Measuring instrument	Oscilloscope	* This adjustment must follow item 4 (Filter).
Test point	TP3	1. Supply an RF signal (L-CH only stereo sound 300Hz 30%MOD).
EXT trigger	----	2. Observe the waveform at TP3.
Measurement range	DIV 10mV TIM 2ms	3. Activate the circuit adjustment mode. (refer to page 18)
Input signal	RF signal (stereo sound)	4. Set the adjustment function to "MCS". ("AUDIO" button)
Input terminal	RF IN terminal	5. Make sure that the data of "5 HSP" is "32".
		6. Select adjustment item "4 LSP". ("VIDEO" button)
		7. Set the adjustment data so the amplitude of the waveform (300Hz) is minimum. ("ADJUST" button)
		8. Change the modulating signal to 3KHz.
		9. Select adjustment item "5 HSP". ("VIDEO" button)
		10. Set the adjustment data so that amplitude of the waveform (3kHz) is minimum. ("ADJUST" button)
		11. Repeat the steps 6 to 7.
		12. Write the adjustment data into memory. (Press "ENTER")
		13. Terminate the circuit adjustment mode. (Press "MENU" twice)

PCB-AV (COMPONENT SIDE)

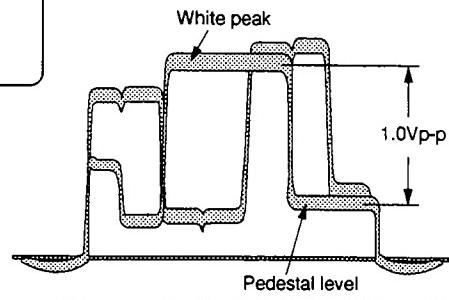
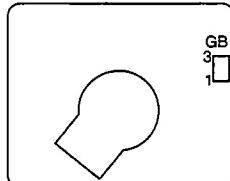


[Chroma circuit]	Adjustment purpose	To set the maximum white level.
6. White level	Symptom when incorrectly adjusted	Too bright or too dark white areas of the picture.

Measuring instrument	Oscilloscope	1. Supply a VIDEO signal (color bar).
Test point	pin 1 of connector GB	2. Activate the circuit adjustment mode. (refer to page 18)
EXT trigger	----	3. Set the adjustment function to "VCH". ("AUDIO" button)
Measurement range	DIV 50mV TIM 10μs	4. Set the adjustment items shown in the list below to the initial data value.
Input signal	VIDEO signal (color bar)	5. Set the adjustment data of the adjustment item "35 GMA " to "0". ("VIDEO" and "ADJUST" buttons)
Input terminal	VIDEO IN terminal	6. Set the adjustment data of the adjustment item "36 GMG " to "0". ("VIDEO" and "ADJUST" buttons)
		7. Set the adjustment data of the adjustment item "02 BRT " to "150". ("VIDEO" and "ADJUST" buttons)
		8. Select adjustment item "03 CNT". ("VIDEO" button)
		9. Observe the waveform at Pin 1 of connector GB.
		10. Set the adjustment data so the waveform on the oscilloscope matches waveform below. ("ADJUST" button)
		11. Write the adjustment data into memory. (Press "ENTER")

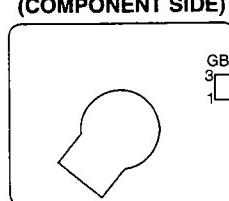
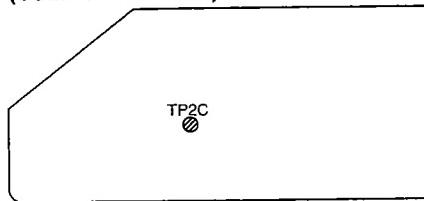
Note : Adjustment item 7 (Vector) must be performed immediately after this adjustment.

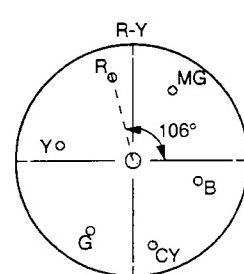
PCB-VMCRT
(COMPONENT SIDE)



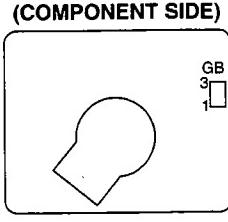
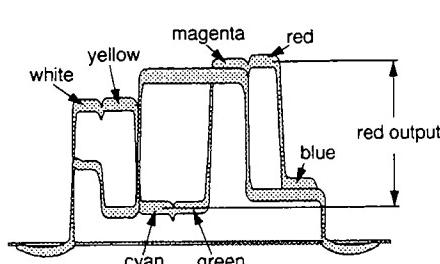
No.	Adjustment item	Initial data	No.	Adjustment item	Initial data	No.	Adjustment item	Initial data
00	COL	80	17	AFC	3	38	R-Y	16
05	CTR	255	26	CRS	1	39	B-Y	21
06	CTG	255	28	DRR	1	40	G-Y	1
07	CTB	255	29	DRB	1			
08	DHR	63	30	CRS	1			
09	DHB	63	33	DL1	0			

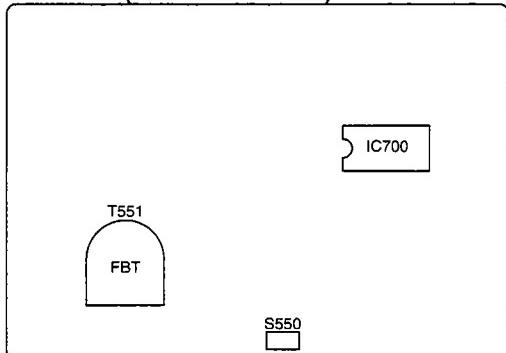
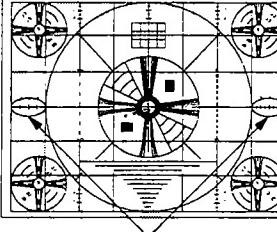
[Chroma circuit] 7. Vector		Adjustment purpose To produce correct hues.
Symptom when incorrectly adjusted		Different hues between the main and sub pictures.
Measuring instrument	Oscilloscope	* This adjustment must follow item 6 (White level). 1. Supply a VIDEO signal (color bar). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Connect TP2C to the ground through an electrolytic capacitor (330μF, 16V or more). 4. Set the adjustment function to "VCH". ("AUDIO" button) 5. Select adjustment item "01 TNT". ("VIDEO" button) 6. Observe the waveform at pin 1 and pin 2 of connector GB. 7. Set the adjustment data so that the red point in the vector waveform, is at 106 degrees. ("ADJUST" button) 8. Write the adjustment data into memory. (Press "ENTER")
Test point	X-CH:pin 2 of connector GB Y-CH:pin 1 of connector GB	Note : Adjustment item 8 (Color output) must be performed immediately after this adjustment.
EXT trigger	---	
Measurement range	DIV 50mV X-Y mode	
Input signal	VIDEO signal (color bar)	
Input terminal	VIDEO IN terminal	

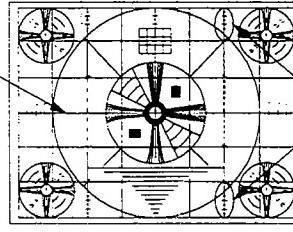




Vector waveform

[Chroma circuit] 8. Color output		Adjustment purpose To set the color level of picture.
Symptom when incorrectly adjusted		Excess or insufficient color.
Measuring instrument	Oscilloscope	* This adjustment must follow item 7 (Vector). 1. Supply a VIDEO signal (color bar). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "00 COL". ("VIDEO" button) 5. Observe the waveform at pin 1 of connector GB. 6. Set the adjustment data so the amplitude of the red output voltage waveform is 1.80 ± 0.05 Vp-p. ("ADJUST" button) 7. Set the adjustment data of the adjustment item "35 GMA" to "15". ("VIDEO" and "ADJUST" buttons) 8. Set the adjustment data of the adjustment item "36 GMG" to "15". ("VIDEO" and "ADJUST" buttons) 9. Write the adjustment data into memory. (Press "ENTER") 10. Terminate the circuit adjustment mode. (Press "MENU" twice) 11. Remove the electrolytic capacitor from TP2C and the ground.
Test point	pin1 of connector GB	
EXT trigger	---	
Measurement range	DIV 50mV TIM 10μs	
Input signal	VIDEO signal (color bar)	
Input terminal	VIDEO IN terminal	

[Deflection circuit] 9. Horizontal width		Adjustment purpose	To set the width of picture.										
Symptom when incorrectly adjusted		Picture compressed or expanded horizontally.											
Measuring instrument	---	1. Supply a VIDEO signal (monoscope).											
Test point	---	2. Set S550 to the mechanical center position. (CS-35303 only) Set S550 so that the picture is nearly centered.(CS-31203, CS-31203C, CS-31303, CS-31303C, CK-35403 only)											
EXT trigger	---	3. Activate the circuit adjustment mode. (refer to page 18)											
Measurement range	---	4. Set the adjustment function to "VCH". ("AUDIO UP/Down button)											
Input signal	VIDEO signal (monoscope)	5. Set the adjustment data of the adjustment item "51 HCM" to the data shown in the list below. ("VIDEO" and "ADJUST" buttons)											
Input terminal	VIDEO IN terminal	6. Select adjustment item "12 HWD". ("VIDEO" button)											
		7. Set the adjustment data so that the sum of markers for the horizontal width is 6.5. ("ADJUST" button)											
		8. Write the adjustment data into memory. (Press "ENTER")											
		9. Terminate the circuit adjustment mode. (Press "MENU" twice)											
PCB-MAIN (COMPONENT SIDE)		 											
		Horizontal markers											
		<table border="1"> <tr> <td></td><td>CS-31303 CS-31303C</td><td>CS-31203 CS-31203C</td><td>CS-35303</td><td>CK-35304</td></tr> <tr> <td>51 HCM</td><td>9</td><td>8</td><td>7</td><td></td></tr> </table>			CS-31303 CS-31303C	CS-31203 CS-31203C	CS-35303	CK-35304	51 HCM	9	8	7	
	CS-31303 CS-31303C	CS-31203 CS-31203C	CS-35303	CK-35304									
51 HCM	9	8	7										

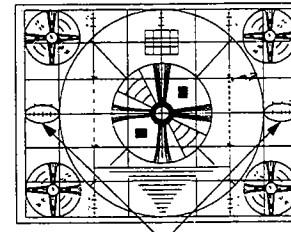
[Deflection circuit] 10. Vertical linearity and height		Adjustment purpose	To set vertical height and linearity.								
Symptom when incorrectly adjusted		Incorrect vertical height or linearity.									
Measuring instrument	---	1. Supply a VIDEO signal (monoscope).									
Test point	---	2. Activate the circuit adjustment mode. (refer to page 18)									
EXT trigger	---	3. Set the adjustment function to "VCH". ("AUDIO button)									
Measurement range	---	4. Set the adjustment data of the adjustment item "50 VCM" to the value shown in the list below. ("VIDEO" and "ADJUST" buttons)									
Input signal	VIDEO signal (monoscope)	5. Select adjustment item "45 VLR" (vertical linearity). ("VIDEO" button)									
Input terminal	VIDEO IN terminal	6. Set the adjustment data so that the distances from the top and bottom of the largest circle, to the center horizontal line are equal. ("ADJUST" button)									
		7. Select adjustment item "10 VHT" ("Vertical height). ("VIDEO" button)									
		8. Set the adjustment data so that the sum of markers for the vertical height is 4.2. ("ADJUST" button)									
		9. Write the adjustment data into memory. (Press "ENTER")									
		10.Terminate the circuit adjustment mode. (Press "MENU" twice)									
											
		Horizontal center line Vertical markers									
		<table border="1"> <tr> <td></td><td>CS-31303 CS-31303C</td><td>CS-31203 CS-31203C</td><td>CS-35303 CK-35304</td></tr> <tr> <td>50 VCM</td><td>9</td><td>8</td><td></td></tr> </table>			CS-31303 CS-31303C	CS-31203 CS-31203C	CS-35303 CK-35304	50 VCM	9	8	
	CS-31303 CS-31303C	CS-31203 CS-31203C	CS-35303 CK-35304								
50 VCM	9	8									

[Deflection circuit] 11.Side PCC		Adjustment purpose	Minimize side pincushion distortion.
Symptom when incorrectly adjusted		Horizontal distortion in the picture.	
Measuring instrument	---		* This adjustment must follow item 10(Vertical linearity and height). 1. Supply a VIDEO signal (crosshatch). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "11 PAM" (PCC-AMP). ("VIDEO" button) 5. Note the second vertical lines from both right and left sides. Set the adjustment data so that the second line is almost straight. ("ADJUST" button)
Test point	---		6. Select adjustment item "47 PPH". (PCC-Phase). ("VIDEO" button) 7. Note the second lines from both right and left sides of the cross hatch. Set the adjustment data so that the distortion is symmetrical at the top and bottom of the vertical lines. ("ADJUST" button)
EXT trigger	---		8. Alternately repeat steps 4 and 7 to minimize side raster distortion. 9. Write the adjustment data into memory. (Press "ENTER") 10.Terminate the circuit adjustment mode. (Press "MENU" twice)
Measurement range	---		Note : If the side raster is significantly distorted in the middle, set the adjustment data of items "48 PC1" (bottom PCC corner AMP), "49PC2" (top PCC corner AMP) and "11 PAM" (PCC-AMP), for minimum distortion.
Input signal	VIDEO signal (cross hatch)		
Input terminal	VIDEO IN terminal		

[Deflection circuit] 12.Vertical S Correction		Adjustment purpose	Set the Vertical compression/expansion at the top and bottom.
Symptom when incorrectly adjusted		Vertically compressed or expanded at the top and bottom of the picture.	
Measuring instrument	---		1. Supply a VIDEO signal (crosshatch). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "44 VSC". ("VIDEO" button)
Test point	---		5. Set the adjustment data so that the height of the squares in the cross hatch are equal at the top, bottom, and middle of the pattern. ("ADJUST" button) 6. Write the adjustment data into memory. (Press "ENTER") 7. Terminate the circuit adjustment mode. (Press "MENU" twice)
EXT trigger	---		Note : Adjustment item 10(Vertical linearity, Vertical Height) must be performed immediately after this adjustment.
Measurement range	---		
Input signal	VIDEO signal (cross hatch)		
Input terminal	VIDEO IN terminal		

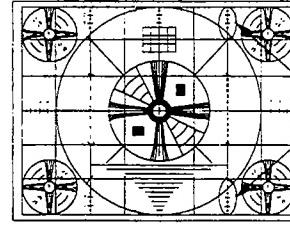
The diagram illustrates the effect of vertical compression or expansion. It shows two vertical rectangles representing the screen. The left rectangle is labeled "Wider on top and bottom" and the right one is labeled "Narrower on top and bottom". Both rectangles have dashed lines at the top and bottom, with arrows pointing to them labeled "Top side" and "Bottom side" respectively.

[Deflection circuit] 13. Horizontal position		Adjustment purpose	To set the horizontal position of the picture on screen.
		Symptom when incorrectly adjusted	Picture shifted to the left or the right.
Measuring instrument	---	*This adjustment must follow item 9 (Horizontal width). 1. Supply a VIDEO signal (monoscope). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "43 HPH". ("VIDEO" button) 5. Set the adjustment data so the left and right markers are the same. ("ADJUST" button) 6. Write the adjustment data into memory. (Press "ENTER") 7. Terminate the circuit adjustment mode. (Press "MENU" twice)	
Test point	---		
EXT trigger	---		
Measurement range	---		
Input signal	VIDEO signal (monoscope)		
Input terminal	VIDEO IN terminal		



Horizontal markers

[Deflection circuit] 14. Vertical position		Adjustment purpose	To set the vertical position of the picture.
		Symptom when incorrectly adjusted	The picture will be too high or too low, on the screen.
Measuring instrument	---	1. Supply a VIDEO signal (monoscope). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "46 VSF". ("VIDEO" button) 5. Set the adjustment data so the upper and lower markers are the same. ("ADJUST" button) 6. Write the adjustment data into memory. (Press "ENTER") 7. Terminate the circuit adjustment mode. (Press "MENU" twice)	
Test point	---		
EXT trigger	---		
Measurement range	---		
Input signal	VIDEO signal (monoscope)		
Input terminal	VIDEO IN terminal		



Vertical markers

[CRT circuit] 15. CRT bias, Cut off	Adjustment purpose	Setting the cut off level of the three electron beams.
	Symptom when incorrectly adjusted	Monochrome has a color tint.
Measuring instrument	---	1. Supply a VIDEO signal (monoscope). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH" ("AUDIO button) and set the adjustment items shown in the Table 1 and Table 2 to the initial data value. 4. Set the data of item "35 GMA" to "00". ("VIDEO" and "ADJUST" buttons) 5. Select adjustment item."19 SVS".("VIDEO" button) 6. Set the adjustment data to "00" (The screen will change to display a single horizontal line). ("ADJUST" button) 7. Set the SCREEN VR on FBT(T551) to the point where a red, green, or blue line just becomes visible. 8. Set the adjustment data to "01". (The screen will return to the normal display.) ("ADJUST" button) 9. Referring to adjustment items "05 CTR" , "06 CTG" and "07 CTB", adjust the data of the items for to the two colors not visible in the step 7. Adjust data so the horizontal line is white. ("VIDEO" and "ADJUST" buttons)
Test point	---	Note : The screen displays the single white line for a certain amount of time after the adjustment data is modified. (While adjusting, the screen goes to a single horizontal line.)
EXT trigger	---	Note : CUT OFF data for the color visible on the screen displaying the single line in step 7 must not be changed.
Measurement range	---	10. Write the adjustment data into memory. (Press "ENTER") 11. Terminate the circuit adjustment mode. (Press "MENU" twice)
Input signal	VIDEO signal (monoscope)	Note : Adjustment item 16 (while balance)must be performed immediately after this adjustment.
Input terminal	VIDEO IN terminal	

Table. 1

No.	Adjustment Item	Initial Data	No.	Adjustment Item	Initial Data
02	BRT	135	28	DRR	01
03	CNT	70	29	DRB	01
08	DHR	63	30	CBS	01
09	DHB	63	36	GMG	15
26	CRS	01			

Table. 2

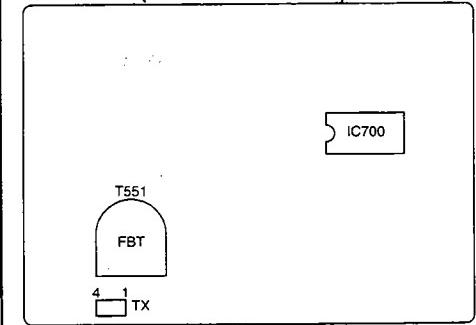
The color of light. to be adjusted	Adjustment Item	Initial Data
Red	05 CTR	255
Green	06 CTG	255
Blue	07 CTB	255

[CRT circuit] 16. White balance		Adjustment purpose	The best white balance of picture.
		Symptom when incorrectly adjusted	Colored monochrome.
Measuring instrument	---	<ul style="list-style-type: none"> * This adjustment must follow item 15(CRT bias Cut, off). 1. Supply a VIDEO signal (white raster). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment items "8 DHR" (R-DRIVE) and "9 DHB" (B-DRIVE). ("VIDEO" button) 5. Set the adjustment data for a white raster. ("ADJUST" button) <p>Note : If the adjustment data in "8 DMR" and "9 DMB" needs to be decreased below the adjustable range, change the data in "28 DRR" from "01" to "00", for adjustment item "8 DMB", and in "29 DRB" for "9DMB".</p>	
Test point	---		
EXT trigger	---		
Measurement range	---		
Input signal	VIDEO signal (white raster)		
Input terminal	VIDEO IN terminal	<ul style="list-style-type: none"> 6. Select adjustment item "19SVS" (Single Horizontal Line Switchover). ("VIDEO" button) 7. Set the adjustment data to "00". (The screen will be changed to display a single horizontal line.) ("ADJUST" button) 8. Make sure that the color of the horizontal line is white. If not white, repeat the adjustment in item 15(CRT bias, Cut off). 9. Write the adjustment data into memory. (Press "ENTER") 10.Terminate the circuit adjustment mode. (Press "MENU" twice) <p>Note : Adjustment item 17 (Black level) must be performed immediately after this adjustment.</p>	

[Video circuit] 17. Black level		Adjustment purpose	Picture luminance.												
		Symptom when incorrectly adjusted	Excessive or insufficient brightness.												
Measuring instrument	---	<ul style="list-style-type: none"> * This adjustment must follow item 16(White balance). 1. Supply a VIDEO signal (monoscope). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "2 BRT" (BRIGHT CONT). ("VIDEO" button) 5. Observe a gradation signal inside a monoscope signal, and set the adjustment data so that the levels of 10% and 0% areas of the gradation are the same (Black level 10%). ("ADJUST" button) 6. Write the adjustment data into memory. (Press "ENTER") 7. Terminate the circuit adjustment mode. (Press "MENU" twice) <p>Note : Adjustment item 18 (Sub cont) must be performed immediately after this adjustment.</p>													
Test point	---														
EXT trigger	---														
Measurement range	---														
Input signal	VIDEO signal (monoscope)														
Input terminal	VIDEO IN terminal	<p>gradation signal</p> <table border="1"> <tr><td>40%</td><td>30%</td><td>20%</td><td>10%</td></tr> <tr><td>50%</td><td>0%</td><td>0%</td><td>0%</td></tr> <tr><td>60%</td><td>70%</td><td>80%</td><td>90%</td></tr> </table> <p>Monoscope signal</p>		40%	30%	20%	10%	50%	0%	0%	0%	60%	70%	80%	90%
40%	30%	20%	10%												
50%	0%	0%	0%												
60%	70%	80%	90%												

[Videe circuit] 18. Sub cont	Adjustment purpose	To set beam current to its optimum value.
	Symptom when incorrectly adjusted	Excessive or insufficient contrast.
Measuring instrument	DC miliammeter	* This adjustment must follow item 17(Black level). * Preheat the set for two minutes or more.
Test point	+ lead : pin 4 of connector TX - lead : pin 1 of connector TX	1. Supply an RF signal (gray scale 87.5% MOD). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "VCH". ("AUDIO" button) 4. Select adjustment item "35 GMA". ("VIDEO" button) 5. Set the adjustment data to "00". ("ADJUST" button) 6. Measure the current at pins 1 and 4 of connector TX (Plus lead to pin 4 of connector TX).
EXT trigger	---	7. Select adjustment item "3 CNT" (CONTRAST). ("VIDEO" button) 8. Set the adjustment data so that the DC miliammeter reads the value shown below. ("ADJUST" button) 9. Select adjustment item "35 GMA". ("VIDEO" button) 10. Set the adjustment data to "15". ("ADJUST" button) 11. Write the adjustment data into memory. (Press "ENTER") 12. Terminate the circuit adjustment mode. (Press "MENU" twice)
Measurement range	---	
Input signal	RF signal (gray scale 87.5%MOD)	
Input terminal	RF IN terminal	

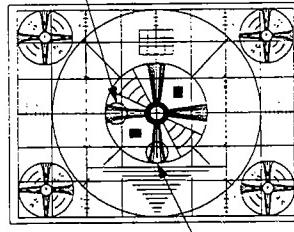
PCB-MAIN (COMPONENT SIDE)



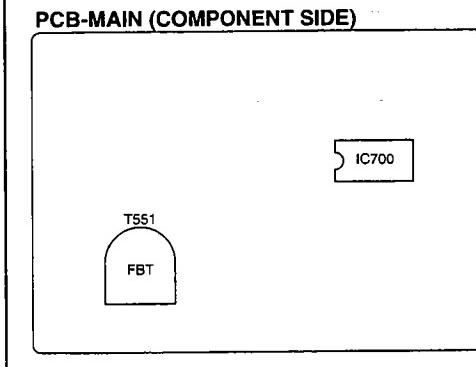
	CS-31203 CS-31203C	CS-31303 CS-31303C	CK-35304	CS-35303
Beam current		2600±100µA		3400±100µA

[Focus circuit] 19. Focus (CS-35303, CK-35304 only)	Adjustment purpose	Sharpness of picture.
	Symptom when incorrectly adjusted	Poor focus.
Measuring instrument	---	1. Supply a VIDEO signal (monoscope).
Test point	---	2. Observe the vertical lines and adjust FOCUS control on the FOCUS PACK for best focus. (CS-35303 only) Observe the vertical lines and adjust FOCUS-2 control on the FBT for best focus. (CK-35304 only)
EXT trigger	---	3. Observe the horizontal lines, and adjust FOCUS-2 control on the FBT for best focus. (CS-35303 only) Observe the horizontal lines, and adjust FOCUS-1 control on the FBT for best focus. (CK-35304 only)
Measurement range	---	4. Repeat steps 2 and 3, two or more times until no further improvement is seen.
Input signal	VIDEO signal (monoscope)	
Input terminal	VIDEO IN terminal	

Check point for horizontal line

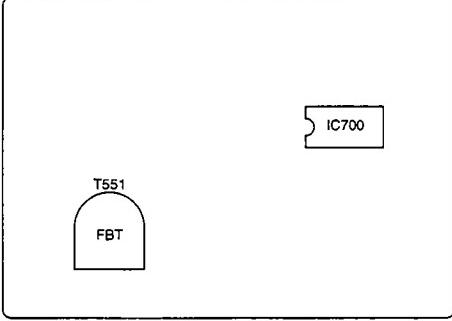


Check point for vertical line
Monoscope signal

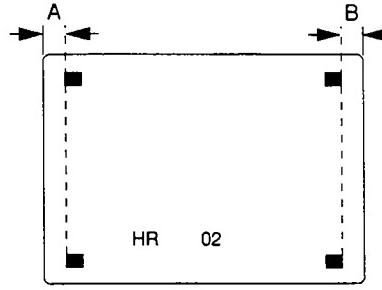


[Focus circuit] 20. Focus (CS-31303, CS-31303C (CS-31203, CS-31203C only)	Adjustment purpose	Sharpness of picture.
	Symptom when incorrectly adjusted	Poor focus.
Measuring instrument	---	1. Supply an RF signal (standard broadcast). 2. Adjust FOCUS control on FBT (T551) for best overall focus.
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (standard broadcast)	
Input terminal	RF IN terminal	

PCB-MAIN (COMPONENT SIDE)



[Screen character circuit] 21. Character position	Adjustment purpose	To position the character display.
	Symptom when incorrectly adjusted	Incorrect character position.
Measuring instrument	---	1. Supply an RF signal (standard broadcast). 2. Activate the circuit adjustment mode. (refer to page 18) 3. Set the adjustment function to "HR". ("AUDIO" button) 4. Adjust the adjustment data so that spaces A and B are the same width. ("ADJUST" button) 5. Write the adjustment data into memory. (Press "ENTER") 6. Terminate the circuit adjustment mode. (Press "MENU" twice)
Test point	---	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (standard broadcast)	
Input terminal	RF IN terminal	



[PIP circuit] 22. PIP fsc (CS-35303, CK-35304 (CS-31303, CS-31303C only)	Adjustment purpose	Set the clock frequency for PIP.
	Symptom when incorrectly adjusted	Disturbance or no color in the sub picture.
Measuring instrument	Frequency counter	1. Supply an RF signal (standard broadcast). 2. Display standard contrast on the sub picture screen. Supply no signal for the main screen. 3. Observe the frequency at TP61. 4. Adjust VC7001 so that the frequency is 3.579545 ± 0.000030 MHz.
Test point	TP61	
EXT trigger	---	
Measurement range	---	
Input signal	RF signal (standard broadcast)	
Input terminal	RF IN terminal	

**PCB-PIP
(COMPONENT SIDE)**

[PIP circuit] 23. PIP chroma gain (CS-35303, CK-35304 (CS-31303, CS-31303C only)	Adjustment purpose	To set the color level between main and sub picture.
	Symptom when incorrectly adjusted	Different color level between main and sub picture.
Measuring instrument	Oscilloscope	* Preheat the set for one minutes or more. 1. Supply a VIDEO signal (color bar).
Test point	pin 7 of connector GE	2. Activate the circuit adjustmant mode. (refer to page 18) 3. Set the adjustmant function to "PIP". ("AUDIO" button)
EXT trigger	---	4. Set all the items in adjustment function "PIP" to the initial data value (refer to page 21). ("VIDEO" and "ADJUST" buttons)
Measurement range	DIV 20mV TIM 10μs	5. Observe the waveform at pin 7 of connector GE (GE side of R7016). 6. Select adjustmant item "1 COLR". ("VIDEO" button)
Input signal	VIDEO signal (color bar)	7. Set the adjustmant data so that the amplitude of the waveforms of the main and sub pictures are equal. ("ADJUST" button)
Input terminal	VIDEO IN terminal	8. Write the adjustmet data into memory. (Press "ENTER") 9. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note : Adjustment item 24 (PIP Sub TINT) must be performed immediately after this adjustment.

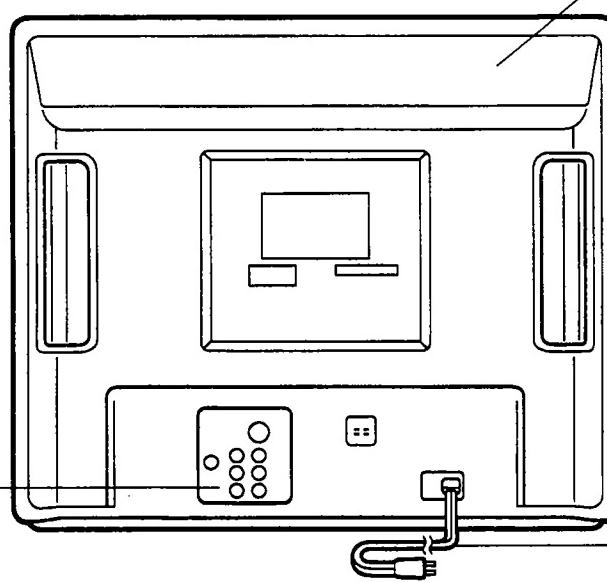
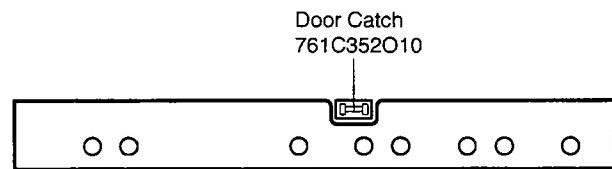
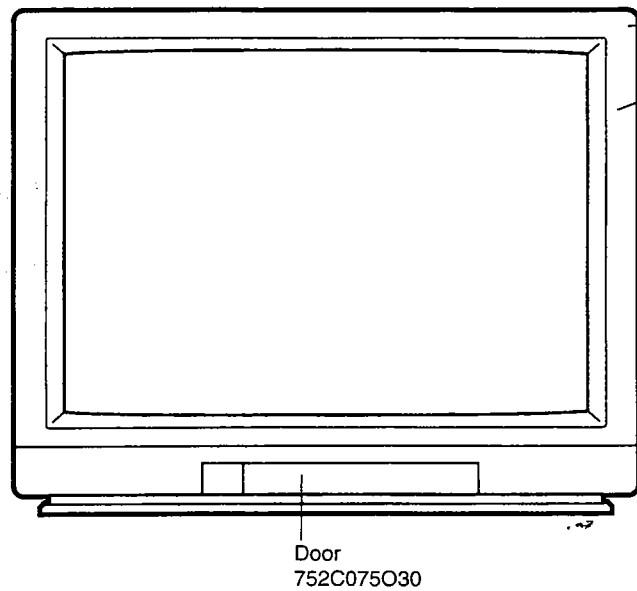
**PCB-PIP
(COMPONENT SIDE)**

Main picture Sub picture

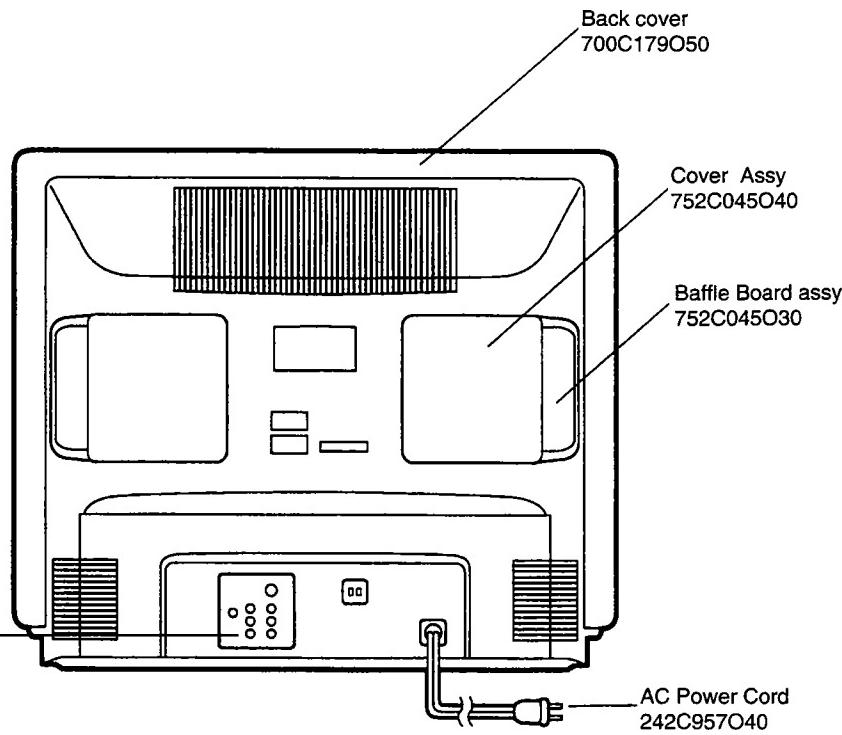
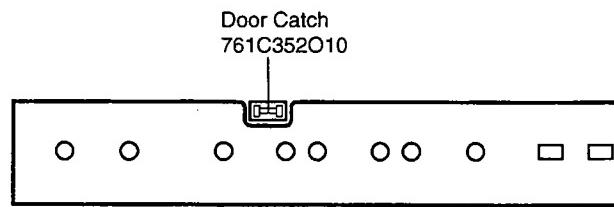
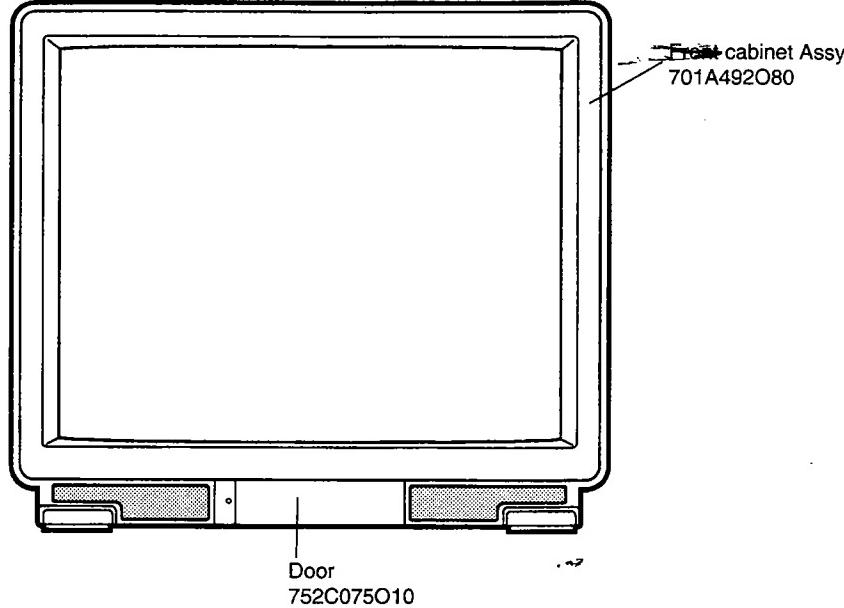
[PIP circuit] 24. PIP Sub TINT (CS-35303, CK-35304 (CS-31303, CS-31303C only)	Adjustment purpose	To obtain the same hue in main and sub pictures.
	Symptom when incorrectly adjusted	Different hue between main and sub picture, and color smear.
Measuring instrument	---	*Preheat the set for one minutes or more. *This adjustment must follow item 23 (PIP chroma gain).
Test point	---	1. Supply a VIDEO signal (color bar). 2. Activate PIP and display the same picture on main picture screen and sub picture screen.
EXT trigger	---	3. Activate the circuit adjustment mode. (refer to page 18) 4. Set the adjustment function to "PIP". ("AUDIO" button)
Measurement range	---	5. Select adjustment item "0 TINT". ("VIDEO" button) 6. Set the adjustment data so that the hue in the sub picture corresponds to the hue in the main picture.
Input signal	VIDEO signal (color bar)	7. Write the adjustment data into memory. (Press "ENTER") 8. Terminal the circuit adjustment mode. (Press "MENU" twice)
Input terminal	VIDEO IN terminal	

PARTS LIST COSMENTIC PARTS REFERENCE

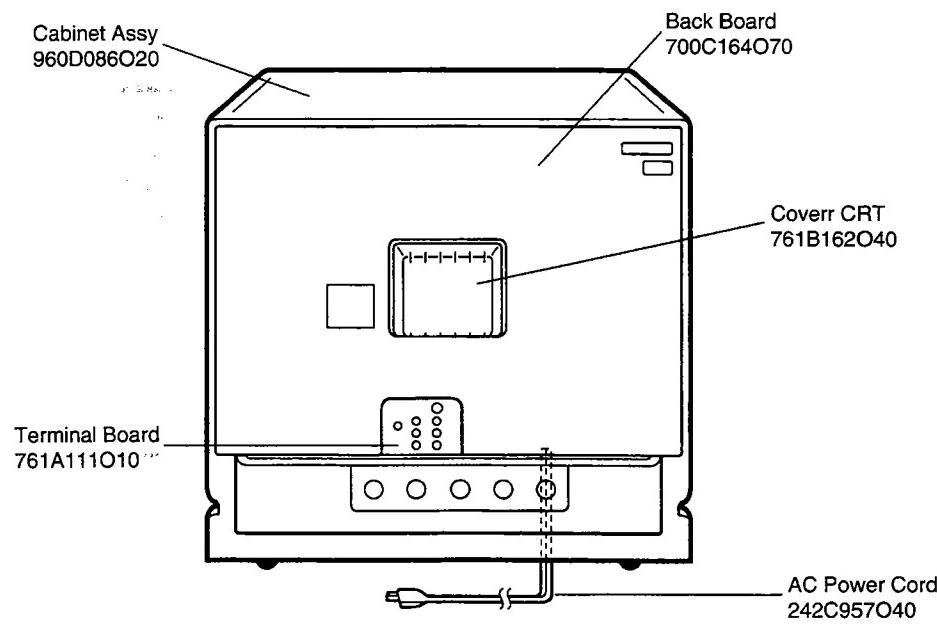
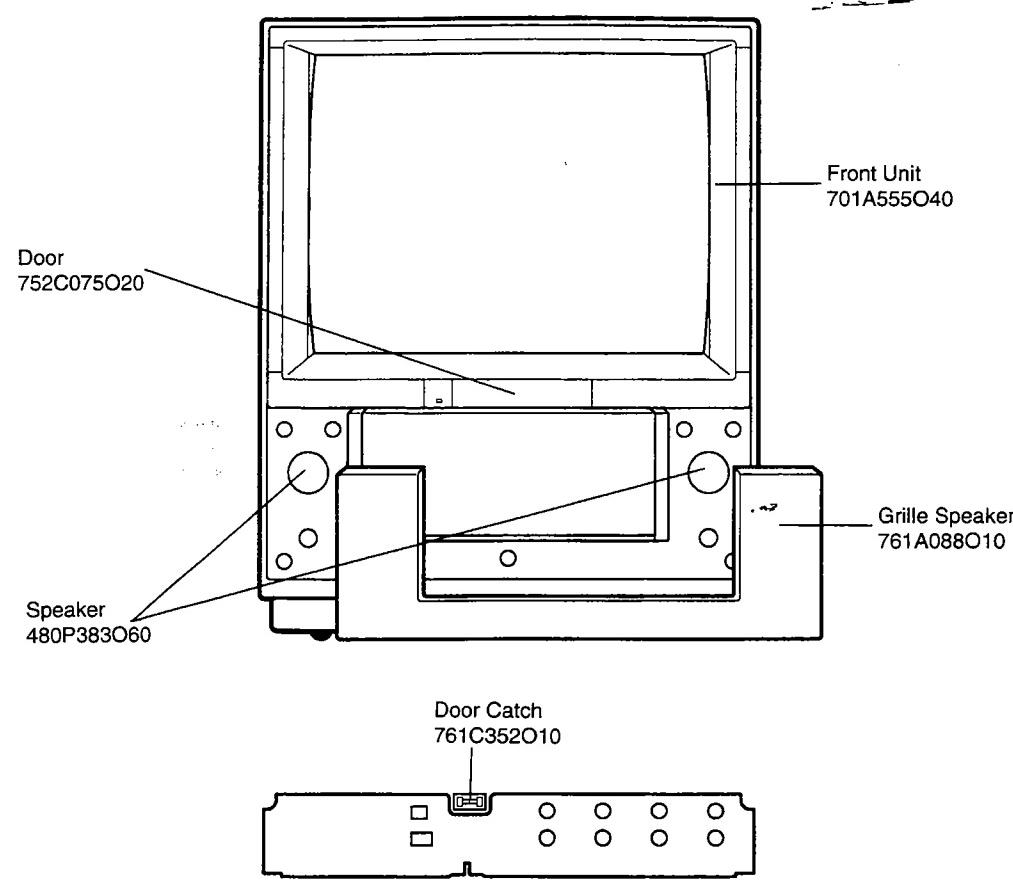
[for CS-31203, CS-31203C, CS-31303, CS-31303C]



[for CS-35303]



[for CK-35304]



PARTS LIST

MODEL : CS-31203/CS-31203C/CS-31303/CS-31303C/CS-35303/CK-35304

In order to expedite delivery of replacement part orders.

- Specify : 1. Model number/Serial number
- 2. Part number and Description
- 3. Quantity

Unless full information is supplied, delay in execution of orders will result.

* : Warranty return items

** : Critical components

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	±0.1	±0.25	±0.5	±1	±2	±5	±10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	±20	±30	+10 -10	+40 -20	+80 -20	+100 -0	+30 -10

MARK	B	C	D	F	G
TOLERANCE (pF)	±0.1	±0.25	±0.5	±1	±2

ABBREVIATION

- [31203] : CS-31203
- [31203C] : CS-31203C
- [31303] : CS-31303
- [31303C] : CS-31303C
- [35303] : CS-35303
- [35304] : CK-35304

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
TUBES							
V 271	255P952O10	CRT ASSY	M7&JUA060X11 [31203,31203C,31303,31303C]	Q 303	260P559030	TRANSISTOR	2SC1740S-S
V 271	255P949O10	CRT ASSY	A89KPP50X03[35303]	Q 304	260P559030	TRANSISTOR	2SC1740S-S
V 271	251P754O10	CRT ASSY	M89KZP411X[35304]	Q 306	260P560040	TRANSISTOR	2SA933S-S
V 271	255B835O04	CRT ASSY	[35304]	Q 311	260P817030	CHIP TRANSISTOR	2SA1037K-S
INTEGRATED CIRCUITS							
IC201	270P190O10	IC	AN5306NFB5	Q 312	260P818030	CHIP TRANSISTOR	2SC2412KS
IC202	272P937O20	IC	CXA1545AS	Q 313	260P818030	CHIP TRANSISTOR	2SC2412KS
IC301	272P140O10	IC	LA4270	Q 3A0	260P818030	CHIP TRANSISTOR	2SC2412KS
IC302	272P942O10	IC	TA8776N	Q 3A1	260P818030	CHIP TRANSISTOR	2SC2412KS
IC3A0	270P188O10	IC	μ PC1852ACT	Q 502	260P420020	TRANSISTOR	2SC2073-B,C
IC401	272P949O10	IC	TA8427K	Q 503	260P560040	TRANSISTOR	2SA933S-S
IC501	272P486O10	IC	μ PC78M09H	Q 505	260P559010	TRANSISTOR	2SC1740S-Q
IC502	266P922O10	IC	μ PC78M05H	Q 506	260P325030	TRANSISTOR	2SC2655-Y
IC503	272P786O10	IC	μ PC24M12HF	Q 510	260P560040	TRANSISTOR	2SA933S-S
IC700	274P557O10	IC	M37266ME-A60SP [except 31303C]	Q 520	260P560040	TRANSISTOR	2SA933S-S
IC700	274P557O30	IC	M37266ME-A62SP[31303C]	Q 521	260P559030	TRANSISTOR	2SC1740S-S
IC701	263D002O10	IC	24C02A	Q 522	260P559030	TRANSISTOR	2SC1740S-S
IC702	266P130O30	IC	PST520E	Q 531	260P325030	TRANSISTOR	2SC2655-Y
IC7001	270P187O10	IC	M52694P	Q 532	260P797020	TRANSISTOR	2SD2349
			[31303,31303C,35303,35304]	Q 540	260P469020	TRANSISTOR	2SA1320
IC7002	274P553O10	IC	M65607SP [31303,31303C,35303,35304]	Q 560	260P559050	TRANSISTOR	2SC1740S-E
IC7003	263P548O10	IC	HM53461ZP-12 [31303,31303C,35303,35304]	Q 5A1	260P817030	CHIP TRANSISTOR	2SA1037K-S
IC951	267P104O20	IC	STR-D4512 [31203,31203C,31303,31303C]	Q 5300	260P664030	TRANSISTOR	2SC4636[35303,35304]
IC952	272P603O10	IC	NJM78L05A	Q 5301	260P664030	TRANSISTOR	2SC4636[35303,35304]
IC953	266P931O10	IC	L78M09	Q 5302	260P338050	TRANSISTOR	2SC2603-G[35303,35304]
IC954	272P601O10	IC	LM78M05CT [31303,31303C,35303,35304]	Q 5303	260P254010	TRANSISTOR	2SA1175-E[35303,35304]
IC9A1	266P934O20	IC	μ PC7812H [31203,31203C,31303,31303C]	Q 5304	260P338060	TRANSISTOR	2SC2603-F,G[35303,35304]
IC9010	267P112O10	IC	STR-M6511[35303,35304]	Q 601	260P818030	CHIP TRANSISTOR	2SC2412KS
IC9500	267P062O10	IC	SE130N[35303,35304]	Q 602	260P818030	CHIP TRANSISTOR	2SC2412KS
IC9510	266P934O20	IC	μ PC7812H[35303,35304]	Q 611	260P817030	CHIP TRANSISTOR	2SA1037K-S
TRANSISTORS							
Q 101	260P560040	TRANSISTOR	2SA933S-S	Q 651	260P571010	TRANSISTOR	2SC3789-D,E
Q 102	260P560040	TRANSISTOR	2SA933S-S	Q 652	260P571010	TRANSISTOR	2SC3789-D,E
Q 103	260P559030	TRANSISTOR	2SC1740S-S	Q 653	260P571010	TRANSISTOR	2SC3789-D,E
Q 104	260P560040	TRANSISTOR	2SA933S-S	Q 654	260P559030	TRANSISTOR	2SC1740S-S
Q 201	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 655	260P559030	TRANSISTOR	2SC1740S-S
Q 202	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 656	260P559030	TRANSISTOR	2SC1740S-S
Q 203	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 703	260P521010	TRANSISTOR	2SC2878-B
Q 204	260P582O10	TRANSISTOR	2SK656	Q 704	260P559030	TRANSISTOR	2SC1740S-S
Q 206	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 707	260P559030	TRANSISTOR	2SC1740S-S
Q 207	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 7A0	260P559030	TRANSISTOR	2SC1740S-S
Q 208	260P817030	CHIP TRANSISTOR	2SA1037K-S	Q 7A5	260P559030	TRANSISTOR	2SC1740S-S
Q 211	260P416O30	TRANSISTOR	2SC2274-F	Q 7A6	260P559030	TRANSISTOR	2SC1740S-S
Q 212	260P818030	CHIP TRANSISTOR	2SC2412KS	Q 7001	260P560040	TRANSISTOR	2SA933S-S [31303,31303C,35303,35304]
Q 213	260P817030	CHIP TRANSISTOR	2SA1037K-S	Q 7002	260P560040	TRANSISTOR	2SA933S-S [31303,31303C,35303,35304]
Q 301	260P632O10	TRANSISTOR	DTC124ES	Q 7003	260P560040	TRANSISTOR	2SA933S-S [31303,31303C,35303,35304]
Q 302	260P559030	TRANSISTOR	2SC1740S-S	Q 7004	260P560040	TRANSISTOR	2SA933S-S [31303,31303C,35303,35304]
				Q 7007	260P559030	TRANSISTOR	2SC1740S-S [31303,31303C,35303,35304]
				Q 8001	260P573020	TRANSISTOR	2SB940A-P
				Q 8002	260P574O20	TRANSISTOR	2SD1264A-P
				Q 8003	260P559050	TRANSISTOR	2SC1740S-E
				Q 8004	260P560040	TRANSISTOR	2SA933S-S
				Q 8005	260P559050	TRANSISTOR	2SC1740S-E
				Q 8006	260P560040	TRANSISTOR	2SA933S-S
				Q 8007	260P560040	TRANSISTOR	2SA933S-S

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
Q 8011	260P559O30	TRANSISTOR	2SC1740S-S	D 5301	264P045040	DIODE	1S24710M[35303,35304]
Q 951	260P325O30	TRANSISTOR	2SC2655-Y [31203,31203C,31303,31303C]	D 5302	264P488O20	DIODE	RD13FB1[35303,35304]
Q 952	260P560O40	TRANSISTOR	2SA933S-S	D 5305	264P045040	DIODE	1S24710M[35303,35304]
Q 953	260P416O30	TRANSISTOR	2SC2274-F	D 5306	264P528O30	DIODE	RP 1H[35303,35304]
Q 954	260P560O40	TRANSISTOR	2SA933S-S[35303,35304]	D 5307	264P528O30	DIODE	RP 1H[35303,35304]
Q 9010	260P422O10	TRANSISTOR	2SC2482[35303,35304]	D 5310	264P543O10	DIODE	EG01[35303,35304]
Q 9020	260P560O40	TRANSISTOR	2SA933S-S[35303,35304]	D 5311	264P045040	DIODE	1S24710M[35303,35304]
Q 9030	260P560O40	TRANSISTOR	2SA933S-S[35303,35304]	D 5312	264P045040	DIODE	1S24710M[35303,35304]
Q 9040	260P422O10	TRANSISTOR	2SC2482[35303,35304]	D 601	264P485O60	DIODE	RD7.5FB2
Q 9500	260P559O50	TRANSISTOR	2SC1740S-E[35303,35304]	D 606	264P045040	DIODE	1S24710M
Q 9510	260P560O40	TRANSISTOR	2SA933S-S[35303,35304]	D 607	264P045040	DIODE	1S24710M
DIODES				D 608	264P045040	DIODE	1S24710M
D 101	264P470O40	DIODE	RD33EB1	D 609	264P825O10	DIODE	ERA15-02
D 201	264P485O60	DIODE	RD7.5FB2	D 612	264P045040	DIODE	1S24710M
D 202	264P485O60	DIODE	RD7.5FB2	D 700	264P485O60	DIODE	RD7.5FB2
D 207	264P485O60	DIODE	RD7.5FB2	D 701	264P485O60	DIODE	RD7.5FB2
D 211	264P045040	DIODE	1S24710M	D 702	264P485O60	DIODE	RD7.5FB2
D 301	264P045040	DIODE	1S24710M	D 703	264P485O60	DIODE	RD7.5FB2
D 302	264P045040	DIODE	1S24710M	D 704	264P485O60	DIODE	RD7.5FB2
D 303	264P045040	DIODE	1S24710M	D 705	264P485O60	DIODE	RD7.5FB2
D 304	264P045040	DIODE	1S24710M	D 706	264P485O60	DIODE	RD7.5FB2
D 305	264P045040	DIODE	1S24710M	D 707	264P485O60	DIODE	RD7.5FB2
D 308	264P045040	DIODE	1S24710M	D 708	264P485O60	DIODE	RD7.5FB2
D 312	264P045040	DIODE	1S24710M	D 709	264P484O20	DIODE	RD5.6FB1
D 313	264P825O10	DIODE	ERA15-02	D 710	264P484O20	DIODE	RD5.6FB1
D 420	264P045040	DIODE	1S24710M	D 711	264P485O60	DIODE	RD7.5FB2
D 443	264D056O20	DIODE	ERB12-02RK	D 717	264P485O60	DIODE	RD7.5FB2
D 457	264D056O20	DIODE	ERB12-02RK	D 718	264P485O60	DIODE	RD7.5FB2
D 466	264P825O10	DIODE	ERA15-02	D 719	264P485O60	DIODE	RD7.5FB2
D 503	264P825O10	DIODE	ERA15-02	D 720	264P485O60	DIODE	RD7.5FB2
D 525	264P488O40	DIODE	RD13FB3	D 721	264P485O60	DIODE	RD7.5FB2
D 525	264P486O60	DIODE	[31203,31203C,31303,31303C]	D 722	264P485O60	DIODE	RD7.5FB2
D 526	264P045040	DIODE	RD9.1FB3[35303,35304]	D 724	264P045040	DIODE	1S24710M
D 526	264P045040	DIODE	1S24710M	D 725	264P045040	DIODE	1S24710M
D 531	264P295O20	DIODE	ES 1C	D 726	264P825O10	DIODE	ERA15-02
D 532	264P358O40	DIODE	RU 4A [31203,31203C,31303,31303C]	D 727	264P825O10	DIODE	ERA15-02
D 537	264P533O30	DIODE	RS 4FS	D 728	264P825O10	DIODE	ERA15-02
D 538	264P358O70	DIODE	RU 4AM	D 729	264P825O10	DIODE	ERA15-02
D 540	264P295O20	DIODE	ES 1C [31203,31203C,31303,31303C]	D 730	264P825O10	DIODE	ERA15-02
D 541	264D056O20	DIODE	ERB12-02RK	D 738	264P825O10	DIODE	ERA15-02
D 545	264P045040	DIODE	1S24710M	D 744	264P485O60	DIODE	RD7.5FB2
D 550	264P295O20	DIODE	ES 1C	D 745	264P485O60	DIODE	RD7.5FB2
D 551	264D056O20	DIODE	ERB12-02RK	D 746	264P485O60	DIODE	RD7.5FB2
D 554	264P295O20	DIODE	ES 1C	D 747	264P485O60	DIODE	RD7.5FB2
D 560	264P492O40	DIODE	RD33FB3	D 748	264P485O60	DIODE	RD7.5FB2
D 563	264P102O20	DIODE	RU 3B [31203,31203C,31303,31303C]	D 750	264P485O60	DIODE	RD7.5FB2
D 580	264P244O20	DIODE	HZT33-10	D 751	264P485O60	DIODE	[31203,31203C,31303,31303C]
D 5A1	264P484O70	DIODE	RD6.2FB2	D 7A0	264P485O60	DIODE	RD7.5FB2
D 5A2	264P502O20	DIODE	HZ5BLL	D 7A1	264P485O60	DIODE	RD7.5FB2
D 5A3	264P502O20	DIODE	HZ5BLL	D 7A2	264P045040	DIODE	1S24710M
D 5A4	264P425O10	DIODE	ISS88	D 7A3	264P045040	DIODE	RD7.5FB2
D 5A5	264P825O10	DIODE	ERA15-02	D 7A4	264P485O60	DIODE	1S24710M
D 5A6	264P045040	DIODE	1S24710M	D 7001	264P045040	DIODE	[31303,31303C,35303,35304]
D 5300	264P045040	DIODE	1S24710M[35303,35304]	D 7002	264P045040	DIODE	[31303,31303C,35303,35304]

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
D 7600	264P225O20	LIGHT EMITTING DIODE	LN35GP[except 35304]	D 9620	264P045O40	DIODE	1S24710M[35303,35304]
D 7600	264P203O20	LIGHT EMITTING DIODE	TLG124A-E[35304]			OTHER SEMICONDUCTORS	
D 7601	264P488O20	DIODE	RD13FB1[35303,35304]	RP9A1	265P071040	POSITIVE THERMISTOR	<CSROMD> [31203,31203C,31303,31303C]
D 8001	264P045O40	DIODE	1S24710M	RP9010	265P071040	POSITIVE THERMISTOR	<CSROMD>[35303,35304]
D 8002	264P045O40	DIODE	1S24710M			FILTERS	
D 8003	264D056O20	DIODE	ERB12-02RK	CF5A1	299P154O20	CERAMIC RESONATOR	CSB503F38
D 8004	264D056O20	DIODE	ERB12-02RK			DELAY LINES	
D 8005	264P045O40	DIODE	1S24710M	DL201	337P142050	DELAY LINE	
D 8006	264P045O40	DIODE	1S24710M	DL202	337P096070	DELAY LINE	
D 8007	264P045O40	DIODE	1S24710M			COILS	
D 8011	264P295O20	DIODE	ES 1C [31203,31203C,31303,31303C]	409B091060	DEGAUSSING COIL		[31203,31203C,31303,31303C]
D 951	264P147O10	DIODE	RM 2C [31203,31203C,31303,31303C]	409B122010	DEGAUSSING COIL		[35303,35304]
D 952	264P147O10	DIODE	RM 2C [31203,31203C,31303,31303C]	330P181040	DEFLECTION YOKE COIL		[35304]
D 953	264P295O20	DIODE	ES 1C [31203,31203C,31303,31303C]	L 101	325C12090	PEAKING COIL	4.7μH-K
D 954	264P295O20	DIODE	ES 1C [31203,31203C,31303,31303C]	L 102	325C112050	PEAKING COIL	100μH-K
D 955	264P295O40	DIODE	ES 1A [31203,31203C,31303,31303C]	L 103	321C010080	RF COIL	2200μH-J
D 956	264P358O70	DIODE	RU 4AM [31203,31203C,31303,31303C]	L 105	321C031040	RF COIL	10μH-K
D 959	264P102O40	DIODE	RU 3M [31203,31203C,31303,31303C]	L 201	325C261030	PEAKING COIL	10μH-K
D 960	264P102O20	DIODE	RU 3B [31203,31203C,31303,31303C]	L 202	325C261030	PEAKING COIL	10μH-K
D 960	264P102O20	DIODE	ERA15-02	L 203	325C261050	PEAKING COIL	15μH-K SO
D 967	264P825O10	DIODE	ERA15-02	L 204	321C011040	RF COIL	6800μH-J
D 968	264P825O10	DIODE	ERA15-02	L 451	321C130010	RF COIL	2.0MH +15%
D 970	264P045O40	DIODE	1S24710M	L 510	409P006080	FILTER COIL	6800μH-J
D 971	264P825O10	DIODE	ERA15-02[35303,35304]	L 512	333P028010	H-LIN.COIL	[except 35303]
D 972	264D056O20	DIODE	ERB12-02RK [31203,31203C,31303,31303C]	L 512	333P028040	H-LIN.COIL	[35303]
D 974	264P045O40	DIODE	1S24710M	L 530	335P012010	CHOKE COIL	250MHz
D 978	264P825O10	DIODE	ERA15-02	L 553	411D009020	FERRITE CORE FILTER	180μH-K
D 9A1	264P508O10	DIODE	S1WB(A)10 [31203,31203C,31303,31303C]	L 570	409P509010	FILTER COIL	[31203,31203C,31303,31303C]
D 9A3	264D056O20	DIODE	ERB12-02RK [31203,31203C,31303,31303C]	L 5300	409P006080	FILTER COIL	6800μH-J[35303,35304]
D 9A4	264D056O20	DIODE	ERB12-02RK [31203,31203C,31303,31303C]	L 601	325C101030	PEAKING COIL	10μH-K
D 9010	264P535O10	DIODE	RBV-608[35303,35304]	L 651	325C302030	PEAKING COIL	68μH-K
D 9020	264P622O10	DIODE	AL01Z[35303,35304]	L 652	325C302030	PEAKING COIL	68μH-K
D 9030	264P101O50	DIODE	RM 1B[35303,35304]	L 653	325C302030	PEAKING COIL	68μH-K
D 9040	264P622O10	DIODE	AL01Z[35303,35304]	L 654	325C301080	PEAKING COIL	27μH-K
D 9050	264P622O10	DIODE	AL01Z[35303,35304]	L 655	325C301080	PEAKING COIL	27μH-K
D 9060	264P488O20	DIODE	RD13FB1[35303,35304]	L 656	325C301080	PEAKING COIL	27μH-K
D 9070	264P102O20	DIODE	RU 3B[35303,35304]	L 657	325C111050	PEAKING COIL	15μH-K
D 9080	264P457O50	DIODE	RD3.0EB1[35303,35304]	L 700	325C121030	PEAKING COIL	10μH-K
D 9090	264P622O10	DIODE	AL01Z[35303,35304]	L 7A0	325C121030	PEAKING COIL	10μH-K
D 9500	264P508O10	DIODE	S1WB(A)10[35303,35304]	L 7A1	325C121030	PEAKING COIL	10μH-K
D 9540	264P825O10	DIODE	ERA15-02[35303,35304]	L 7A2	325C120070	PEAKING COIL	3.3μH-K[35303,35304]
D 9550	264P588O10	DIODE	FML-G16S[35303,35304]	L 7F1	325C121030	PEAKING COIL	10μH-K
D 9560	264P578O10	DIODE	RG 2A[35303,35304]	L 7001	325C121030	PEAKING COIL	10μH-K
D 9570	264P566O10	DIODE	FMP-G12S[35303,35304]	L 7002	325C121030	PEAKING COIL	[31303,31303C,35303,35304]
D 9580	264P566O10	DIODE	FMP-G12S[35303,35304]	L 7003	325C121030	PEAKING COIL	[31303,31303C,35303,35304]
D 9600	264P045O40	DIODE	1S24710M[35303,35304]	L 7004	325C121030	PEAKING COIL	10μH-K
D 9610	264P045O40	DIODE	1S24710M[35303,35304]				[31303,31303C,35303,35304]

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
L 7006	325C121030	PEAKING COIL	10µH-K [31303,31303C,35303,35304]	R 207	103P403060	CHIP RESISTOR	1/10W 8.2KΩ-J
L 7600	325C121030	PEAKING COIL	10µH-K	R 208	103P404030	CHIP RESISTOR	1/10W 33KΩ-J
L 7601	325C121030	PEAKING COIL	10µH-K	R 209	103P401030	CHIP RESISTOR	1/10W 100Ω-J
L 7602	325C121030	PEAKING COIL	10µH-K[35303,35304]	R 210	103P402060	CHIP RESISTOR	1/10W 1.2KΩ-J
L 7603	325C121030	PEAKING COIL	10µH-K [31203,31203C,31303,31303C]	R 212	103P402050	CHIP RESISTOR	1/10W 1KΩ-J
L 8001	411D009020	FERRITE CORE FILTER		R 213	103P401070	CHIP RESISTOR	1/10W 220Ω-J
L 8002	325C121090	PEAKING COIL	33µH-K	R 214	103P405020	CHIP RESISTOR	1/10W 180KΩ-J
L 951	351P069010	FILTER COIL	SBC-9-680-152 [31203,31203C,31303,31303C]	R 215	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
L 9A1	351P090010	LINE FILTER	[31203,31203C,31303,31303C]	R 216	103P404060	CHIP RESISTOR	1/10W 56KΩ-J
L 9A2	351P090010	LINE FILTER	[31203,31203C,31303,31303C]	R 217	103P403000	CHIP RESISTOR	1/10W 2.7KΩ-J
L 9010	351P090010	LINE FILTER	[35303,35304]	R 218	103P403060	CHIP RESISTOR	1/10W 8.2KΩ-J
L 9020	351P090010	LINE FILTER	[35303,35304]	R 221	103P402010	CHIP RESISTOR	1/10W 47Ω-J
L 9030	411P012030	BEAD FERRITE	[35303,35304]	R 223	103P401030	CHIP RESISTOR	1/10W 100Ω-J
L 9040	411P011010	BEAD FERRITE	ZBF503S-P[35303,35304]	R 231	103P409090	CHIP RESISTOR	1/10W 75Ω-J
L 9050	411D009020	FERRITE CORE FILTER	[35303,35304]	R 232	103P409090	CHIP RESISTOR	1/10W 75Ω-J
L 9500	321D019010	RF COIL	0.47µH-K[35303,35304]	R 234	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
L 9510	409P674020	FILTER COIL	[35303,35304]	R 241	103P401030	CHIP RESISTOR	1/10W 100Ω-J
L 9520	321C131060	RF COIL	33MH →+7.5%[35303,35304]	R 242	103P401030	CHIP RESISTOR	1/10W 100Ω-J
L 9530	409P794010	FILTER COIL	33MH →+20%[35303,35304]	R 243	103P401030	CHIP RESISTOR	1/10W 100Ω-J
L 9540	409P674020	FILTER COIL	[35303,35304]	R 245	103P401070	CHIP RESISTOR	[31303,31303C,35303,35304] 1/10W 220Ω-J
L 9550	411P001040	LEAD FERRITE	[35303,35304]	R 247	103P409090	CHIP RESISTOR	1/10W 75Ω-J
LC7001	409P402030	EMI FILTER	FZ103N100 [31303,31303C,35303,35304]	R 254	103P401030	CHIP RESISTOR	1/10W 100Ω-[35303,35304]
LC7002	409P402010	EMI FILTER	B101M100 [31303,31303C,35303,35304]	R 255	103P401030	CHIP RESISTOR	1/10W 100Ω-J
LC7003	409P402010	EMI FILTER	B101M100 [31303,31303C,35303,35304]	R 256	103P401030	CHIP RESISTOR	1/10W 100Ω-J
LC7004	409P402010	EMI FILTER	B101M100 [31303,31303C,35303,35304]	R 263	103P404060	CHIP RESISTOR	1/10W 56KΩ-J
LC7005	409P402010	EMI FILTER	B101M100 [31303,31303C,35303,35304]	R 264	103P404020	CHIP RESISTOR	1/10W 27KΩ-J
LC7006	409P402010	EMI FILTER	B101M100 [31303,31303C,35303,35304]	R 265	103P401030	CHIP RESISTOR	1/10W 100Ω-J
		TRANSFORMERS		R 266	103P403010	CHIP RESISTOR	1/10W 3.3KΩ-J
				R 267	103P401080	CHIP RESISTOR	1/10W 270Ω-J
				R 268	103P401090	CHIP RESISTOR	1/10W 330Ω-J
				R 269	103P400090	CHIP RESISTOR	1/10W 47Ω-J
				R 270	103P405040	CHIP RESISTOR	1/10W 270KΩ-J
				R 271	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
				R 272	103P401030	CHIP RESISTOR	1/10W 100Ω-J
				R 273	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
BF601	349P159070	CHROMA-BP		R 274	103P404020	CHIP RESISTOR	1/10W 27KΩ-J
T 531	336P012040	H.DRIVE	TH7131T	R 275	103P405060	CHIP RESISTOR	1/10W 390KΩ-J
T 551	334D100005	FLYBACK	(334P231C10+) [31203,31203C,31303,31303C]	R 276	103P401070	CHIP RESISTOR	1/10W 220Ω-J
T 551	334P214090	FLYBACK	[35303]	R 277	103P402010	CHIP RESISTOR	1/10W 470Ω-J
T 551	334P214010	FLYBACK	[35304]	R 278	103P401030	CHIP RESISTOR	1/10W 100Ω-J
T 552	349P122050	SIDE PCC	[35303,35304]	R 279	103P403030	CHIP RESISTOR	1/10W 4.7KΩ-J
T 951	350P608020	POWER	[31203,31203C,31303,31303C]	R 280	103P405070	CHIP RESISTOR	1/10W 470KΩ-J
T 9A1	350P417060	POWER	[31203,31203C,31303,31303C]	R 281	103P404020	CHIP RESISTOR	1/10W 27KΩ-J
T 9010	350P504060	POWER	[35303,35304]	R 322	103P404050	CHIP RESISTOR	1/10W 47KΩ-J
T 9020	350P417060	POWER	[35303,35304]	R 323	103P404010	CHIP RESISTOR	1/10W 22KΩ-J
		VARIABLE RESISTORS		R 324	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
VR	129P064010	VR-FOCUS	MHF111-09[35303]	R 325	103P404090	CHIP RESISTOR	1/10W 100KΩ-J
		RESISTORS		R 326	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
R 201	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 327	103P404090	CHIP RESISTOR	1/10W 100KΩ-J
R 202	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 331	103P409050	CHIP RESISTOR	1/10W 0Ω
R 203	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 332	103P409050	CHIP RESISTOR	1/10W 0Ω
R 204	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 333	103P405060	CHIP RESISTOR	1/10W 390KΩ-J
R 206	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 334	103P402050	CHIP RESISTOR	1/10W 1KΩ-J
				R 337	103P409050	CHIP RESISTOR	1/10W 0Ω[35303,35304]
				R 338	103P402050	CHIP RESISTOR	1/10W 1KΩ-J

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 351	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J	R 5B5	103P404000	CHIP RESISTOR	1/10W 18KΩ-J
R 352	103P402080	CHIP RESISTOR	1/10W 1.8KΩ-J	R 5B6	103P403010	CHIP RESISTOR	1/10W 3.3KΩ-J
R 353	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 5B7	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 354	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 5B8	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 355	103P409050	CHIP RESISTOR	1/10W 0Ω	R 5B9	103P406010	CHIP RESISTOR	1/10W 1MΩ-J
R 361	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5C1	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
R 362	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5C3	103P403060	CHIP RESISTOR	1/10W 8.2KΩ-J
R 367	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5C4	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
R 368	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5C7	103P405010	CHIP RESISTOR	1/10W 150KΩ-J
R 369	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5338	103P371000	FUSE	1/4W 560Ω-J[35303,35304]
R 370	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 5352	103P398080	FUSE	1/2W 4.7Ω-J[35303,35304]
R 371	103P401030	CHIP RESISTOR	1/10W 100Ω-J[35303,35304]	R 5355	103P392050	FUSE	1/2W 1KΩ-J[35303,35304]
R 372	103P401030	CHIP RESISTOR	1/10W 100Ω-J[35303,35304]	R 5356	103P392020	FUSE	1/2W 560Ω-J[35303,35304]
R 373	103P405040	CHIP RESISTOR	1/10W 270KΩ-J	R 601	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 374	103P405040	CHIP RESISTOR	1/10W 270KΩ-J	R 602	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 377	103P404090	CHIP RESISTOR	1/10W 100KΩ-J	R 603	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 378	103P404090	CHIP RESISTOR	1/10W 100KΩ-J	R 604	103P402080	CHIP RESISTOR	1/10W 1.8KΩ-J
R 3A0	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 605	103P402080	CHIP RESISTOR	1/10W 1.8KΩ-J
R 3A1	103P404070	CHIP RESISTOR	1/10W 68KΩ-J	R 606	103P402080	CHIP RESISTOR	1/10W 1.8KΩ-J
R 3A2	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 607	103P402070	CHIP RESISTOR	1/10W 1.5KΩ-J
R 3A3	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 608	103P402050	CHIP RESISTOR	1/10W 1KΩ-J
R 3A4	103P473060	CHIP RESISTOR	1/10W 3K-F	R 609	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 3A5	103P474020	CHIP RESISTOR	1/10W 5.1K-F	R 610	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 3A6	103P475030	CHIP RESISTOR	1/10W 15K-F	R 611	103P401090	CHIP RESISTOR	1/10W 330Ω-J
R 3A7	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 612	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
R 3A8	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 613	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
R 3A9	103P402050	CHIP RESISTOR	1/10W 1KΩ-J	R 614	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
R 3B0	103P402050	CHIP RESISTOR	1/10W 1KΩ-J[except 31303]	R 615	103P403010	CHIP RESISTOR	1/10W 3.3KΩ-J
R 3B1	103P473000	CHIP RESISTOR	1/10W 1.6K-F	R 616	103P403010	CHIP RESISTOR	1/10W 3.3KΩ-J
R 3B2	103P403070	CHIP RESISTOR	1/10W 10KΩ-J	R 617	103P404010	CHIP RESISTOR	1/10W 22KΩ-J
R 3B3	103P403070	CHIP RESISTOR	1/10W 10KΩ-J	R 618	103P404010	CHIP RESISTOR	1/10W 22KΩ-J
R 4A1	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 621	103P401070	CHIP RESISTOR	1/10W 220Ω-J
R 4A2	103P405050	CHIP RESISTOR	1/10W 330KΩ-J	R 623	103P402070	CHIP RESISTOR	1/10W 1.5KΩ-J
R 4A3	103P401070	CHIP RESISTOR	1/10W 220Ω-J	R 624	103P409050	CHIP RESISTOR	1/10W 0Ω
R 4A4	103P401070	CHIP RESISTOR	1/10W 220Ω-J	R 631	103P409090	CHIP RESISTOR	1/10W 75Ω-J
R 4A5	103P401070	CHIP RESISTOR	1/10W 220Ω-J	R 634	103P401030	CHIP RESISTOR	1/10W 100Ω-J
R 500	103P398060	FUSE	1/2W 3.3Ω-J	R 635	103P402050	CHIP RESISTOR	1/10W 1KΩ-J
R 536	103P338010	R-CARBON	1/4W 1.2Ω-J	R 636	103P403070	CHIP RESISTOR	1/10W 10KΩ-J
R 538	103P338010	R-CARBON	1/4W 1.2Ω-J	R 640	103P404060	CHIP RESISTOR	1/10W 56KΩ-J
R 540	103P377070	FUSE	1/4W 0.56Ω-K	R 641	103P404020	CHIP RESISTOR	1/10W 27KΩ-J
		[31203,31203C,31303,31303C]					
R 542	103P377070	FUSE	1/4W 0.56Ω-K	R 642	103P402050	CHIP RESISTOR	1/10W 1KΩ-J
		[31203,31203C,31303,31303C]		R 643	103P402010	CHIP RESISTOR	1/10W 470Ω-J
R 544	109D067070	CEMENT WIRE	10W 2.7Ω-K	R 644	103P402090	CHIP RESISTOR	1/10W 2.2KΩ-J
R 561	103P451080	FUSE	2W 270Ω-KJ	R 648	103P404010	CHIP RESISTOR	1/10W 22KΩ-J
R 570	103P397090	FUSE	1/2W 0.82Ω-J	R 649	103P404030	CHIP RESISTOR	1/10W 33KΩ-J
		[31203,31203C,31303,31303C]					
R 5A2	103P409050	CHIP RESISTOR	1/10W 0Ω	R 660	103P437060	FUSE METAL	2W 0.47Ω-KJ
		[31203,31203C,31303,31303C]		R 660	103P438020	FUSE METAL	2W 1.5Ω-J[35303]
R 5A3	103P401070	CHIP RESISTOR	1/10W 220Ω-J	R 660	103P438050	FUSE METAL	2W 2.7Ω-KJ[35304]
R 5A4	103P409050	CHIP RESISTOR	1/10W 0Ω	R 661	103P438010	FUSE METAL	2W 1.2Ω-KJ[35303]
R 5A5	103P403070	CHIP RESISTOR	1/10W 10KΩ-J	R 712	103P744010	NETWORK	1/8W 22KΩ-JX4
R 5A7	103P401030	CHIP RESISTOR	1/10W 100Ω-J				
R 5A8	103P401030	CHIP RESISTOR	1/10W 100Ω-J	R 720	103P743050	NETWORK	1/8W 6.8KΩ-JX4
		[31203,31203C,31303,31303C]		R 720	103P744010	NETWORK	1/8W 22KΩ-JX4[35303,35304]
R 5A9	103P403030	CHIP RESISTOR	1/10W 4.7KΩ-J	R 755	103P744010	NETWORK	1/8W 22KΩ-JX4
R 5B1	103P403030	CHIP RESISTOR	1/10W 4.7KΩ-J	R 7024	103P544010	NETWORK	1/8W 22KΩ-JX4
R 5B2	103P401070	CHIP RESISTOR	1/10W 220Ω-J				
R 5B3	103P401070	CHIP RESISTOR	1/10W 220Ω-J				
R 5B4	103P404090	CHIP RESISTOR	1/10W 100KΩ-J				
		[31303,31303C,35303,35304]					

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
R 8014	103P370010	FUSE	1/4W 10Ω-J	C 640	141P132010	CHIP CAPACITOR	B50V 0.01μF-K
R 8015	103P370050	FUSE	1/4W 22Ω-J	C 950	189P060060	CERAMIC CAPACITOR	E AC250V 2200pF-Z
R 8016	103P370010	FUSE	1/4W 10Ω-J	C 951	189P060060	CERAMIC CAPACITOR	[31203,31203C,31303,31303C] E AC250V 2200pF-Z
R 8045	103P378000	FUSE	1/4W 1.0Ω-J	C 952	185D057060	ELECTROLYTIC-C	180V 820μF-Q
R 975	103P391040	FUSE	1/2W 120Ω-J[35303,35304]	C 953	185D057060	ELECTROLYTIC-C	[31203,31203C,31303,31303C] 180V 820μF-Q
R 9A2	109D132050	CEMENT WIRE	20W 2.2Ω-K [31203,31203C,31303,31303C]	C 961	185D058040	ELECTROLYTIC-C	H160V 220μF-M
R 9030	102P107030	WIRE	2W 0.27Ω-K[35303,35304]	C 980	189P033060	C-PP-AC	[31203,31203C,31303,31303C] AC125V 0.01μF-M
R 9040	102P107040	WIRE	2W 0.33Ω-K[35303,35304]	C 981	189P033080	C-PP-AC	[31203,31203C,31303,31303C] AC125 0.022μF-M
R 9050	102P107030	WIRE	2W 0.27Ω-K[35303,35304]	C 9A1	189P033050	C-PP-AC	[31203,31203C,31303,31303C] AC125V 0.1μF-M
R 9060	109D132050	CEMENT WIRE	20W 2.2Ω-K[35303,35304]	C 9A2	189P033050	C-PP-AC	[31203,31203C,31303,31303C] AC125V 0.1μF-M
R 9590	103P397090	FUSE	1/2W 0.82Ω-J[35303,35304]	C 9010	189P033050	C-PP-AC	[31203,31203C,31303,35304] AC125V 0.1μF-M[35303,35304]
RJ 01	103P409050	CHIP RESISTOR	1/10W 0Ω	C 9020	189P033050	C-PP-AC	[31203,31203C,31303,35304] AC125V 0.1μF-M[35303,35304]
RJ 03	103P409050	CHIP RESISTOR	1/10W 0Ω[31203,31203C]	C 9030	189P033050	C-PP-AC	[31203,31203C,31303,35304] AC125V 0.1μF-M[35303,35304]
RJ 04	103P409050	CHIP RESISTOR	1/10W 0Ω	C 9050	189P060060	CERAMIC CAPACITOR	E AC250V 2200pF-Z
RJ 05	103P409050	CHIP RESISTOR	1/10W 0Ω	C 9060	189P060060	CERAMIC CAPACITOR	[35303,35304] E AC250V 2200pF-Z
RJ 08	103P409050	CHIP RESISTOR	1/10W 0Ω	C 9070	185D057060	ELECTROLYTIC-C	180V 820μF-Q[35303,35304]
RJ 11	103P409050	CHIP RESISTOR	1/10W 0Ω[31203,31203C]	C 9130	189P033060	C-PP-AC	AC125V 0.01μF-M[35303,35304]
RJ 12	103P409050	CHIP RESISTOR	1/10W 0Ω[31203,31203C]	C 9140	189P033080	C-PP-AC	[31203,31203C,31303,35304] AC125 0.022μF-M[35303,35304]
CAPACITORS AND TRIMMERS				C 9550	185D055030	ELECTROLYTIC-C	H160V 820μF-M[35303,35304]
C 205	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	C 9590	185D065030	ELECTROLYTIC-C	H35V 4700μF-M 105C
C 222	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	C 9630	185D065030	ELECTROLYTIC-C	[35303,35304] H35V 4700μF-M 105C
C 332	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	CR971	149P008010	CR-MULTIPLE	[35303,35304] 470PF&3.6μF-K
C 3A8	141P137080	CHIP CAPACITOR	B25V 0.047M	VC7001	202P109030	TRIMMER CAPACITOR	[31303,31303C,35303,35304] 5.5pF-30pF
C 3B4	189D058030	C-TANT	16V 3.3μF-K	SWITCHES			
C 3B5	189D028010	C-TANT	16V 10μF-K	S 550	431C059020	SLIDE SWITCH	2-3
C 453	189D028060	C-TANT	35V 2.2μF-K	S 7600	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 544	172P171030	C-M-PP	1600V 0.01μF-J	S 7600	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 545	172P171030	C-M-PP	1600V 0.01μF-J	S 7601	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 570	189P077090	C-M-PP	400V 0.18μF-J [31203,31203C,31303,31303C]	S 7601	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 570	189P077020	C-M-PP	400V 0.27μF-J[35303,35304]	S 7602	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 571	189P077020	C-M-PP	400V 0.27μF-J[except 35303]	S 7602	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 571	189P077030	C-M-PP	400V 0.33μF-J[35303]	S 7603	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 5A1	154P334030	CHIP CAPACITOR	CH50V 220pF-J	S 7603	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 5B3	141P131030	CHIP CAPACITOR	B50V 2200pF-K [31203,31203C,31303,31303C]	S 7604	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 5B3	141P131060	CHIP CAPACITOR	B50V 3900pF-K[35303,35304]	S 7604	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 5B4	141P131050	CHIP CAPACITOR	B50V 3300pF-K [31203,31203C,31303,31303C]	S 7605	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 5B4	141P131080	CHIP CAPACITOR	B50V 5600pF-K[35303,35304]	S 7605	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 5311	172P170050	C-M-PP	1600V 2200pF-J[35303,35304]	S 7606	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 601	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7606	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 608	154P322000	CHIP CAPACITOR	SL50V 22pF-J	S 7605	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 612	154P331050	CHIP CAPACITOR	CH50V 15pF-J	S 7605	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 614	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7606	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 616	154P321080	CHIP CAPACITOR	SL50V 18pF-J	S 7606	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 617	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7604	432P100010	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 618	141P131030	CHIP CAPACITOR	B50V 2200pF-K	S 7605	432P066070	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 620	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7605	432P100010	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 621	154P323080	CHIP CAPACITOR	SL50V 120pF-J	S 7606	432P066070	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 622	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7606	432P100010	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 623	154P323060	CHIP CAPACITOR	SL50V 100pF-J	S 7608	432P066070	KEY BOARD SWITCH	1-1 L=8.35 T[except 35304]
C 624	141P132010	CHIP CAPACITOR	B50V 0.01μF-K [31303,31303C,35303,35304]	S 7608	432P100010	KEY BOARD SWITCH	1-1 H=4.3[35304]
C 630	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7609	431C092010	SLIDE SWITCH	[35303]
C 630	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7609	431C068030	SLIDE SWITCH	2-3 NON-SHORT[35304]
C 630	141P132010	CHIP CAPACITOR	B50V 0.01μF-K	S 7610	431C091010	SLIDE SWITCH	[35303]

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
S 7610	431C067010	SLIDE SWITCH	2-2 NON SHORT[35304]		920A412011	MAIN PCB ASSY	[35304]
		MISCELLANEOUS			930C812001	PIP PCB ASSY	[31303,31303C,35303,35304]
		338P030Q30 CPM ASSY	[35304]		930C805015	POWER-SUB PCB ASSY	[31203,31203C]
		641D758010 WEDGE	ELASLEN NF-01[35304]		930C805014	POWER-SUB PCB ASSY	[31303,31303C]
AG5000	224D019040	AIR GAP	2KV[35303,35304]		930B667012	POWER PCB ASSY	[35303]
F 501	283D035Q70	FUSE	S2A		930B667011	POWER PCB ASSY	[35304]
F 9A1	283D060Q30	FUSE	S6.3A		930C810015	VMCRT PCB ASSY	[31203,31203C]
			[31203,31203C,31303,31303C]		930C810014	VMCRT PCB ASSY	[31303,31303C]
					930C810012	VMCRT PCB ASSY	[35303]
F 9010	283D060Q30	FUSE	S6.3A[35303,35304]		930C810011	VMCRT PCB ASSY	[35304]
J 201	440C272020	PIN JACK BOARD	6P				
J 202	449C121Q20	SOCKET DIN MINI	YKF15503			MECHANICAL PARTS	
J 601	449C081Q70	SOCKET CRT	[31203,31203C,31303,31303C]		669D220O40	SCREW	3X12 46LA005
J 601	449C123Q20	SOCKET CRT	[35303]		669D221O40	SCREW	4X12 46LA005[except 35303]
J 601	449C113Q10	SOCKET CRT	[35304]		669D221O60	SCREW	4X16 46LA005[except 35304]
K 9A1	287P049Q10	RELAY POWER	DG12D1-0(M)		669D221O30	SCREW	4X10 46LA005[35303]
K 9A2	287P049Q10	RELAY POWER	DG12D1-0(M)		669D212O10	SCREW	3X12
K 9010	287P049Q30	RELAY POWER	[31203,31203C,31303,31303C]				
PC552	268P058Q10	PHOTO COUPLER	DJ12D-0(M)-L[35303,35304]				
PC9010	268P058Q10	PHOTO COUPLER	ON3131-R[35303,35304]				
PC9020	268P058Q10	PHOTO COUPLER	ON3131-R[35303,35304]				
RV9A1	265P100Q10	VARISTOR	ERZV10D271				
RV9010	265P100Q10	VARISTOR	[31203,31203C,31303,31303C]				
SP391	480P646Q50	SPEAKER	ERZV10D271[35303,35304]				
SP391	480P646Q50	SPEAKER	5W 8Ω				
SP391	480P646Q60	SPEAKER	[31203,31203C,31303,31303C]				
SP391	480P383Q60	SPEAKER	5W 16Ω[35303]				
SP392	480P646Q50	SPEAKER	15W 8Ω[35304]				
SP392	480P646Q60	SPEAKER	5W 8Ω				
SP392	480P383Q60	SPEAKER	[31203,31203C,31303,31303C]				
SP392	480P646Q60	SPEAKER	5W 16Ω[35303]				
SP392	480P383Q60	SPEAKER	15W 8Ω[35304]				
SP393	480P400Q20	SPEAKER	[35303]				
SP394	480P400Q20	SPEAKER	[35303]				
TU101	295P420Q20	TUNER	ENG26102G				
X 601	285P029Q10	CRYSTAL RESONATOR	3.5795MHz[except 31303C]				
X 601	285P029Q50	CRYSTAL RESONATOR	3.5795MHz[31303C]				
X 7A0	285P039Q20	CRYSTAL RESONATOR	8.00MHz				
X 7001	285P069Q20	CRYSTAL RESONATOR	HC-49/U				
			[31303,31303C,35303,35304]				
Z 7600	939P296Q60	PREAMP UNIT	HC-437ME[except 35304]				
Z 7600	939P481Q30	PREAMP UNIT	HC-477M[35304]				
Z 9510	233P039Q20	FUSE	SSFR 8A[35303,35304]				
		PRINTED CIRCUIT BOARD ASSYS					
		930C822Q15 AV PCB ASSY	[31203,31203C]				
		930C822Q14 AV PCB ASSY	[31303,31303C]				
		930C822Q12 AV PCB ASSY	[35303]				
		930C822Q11 AV PCB ASSY	[35304]				
		930C589Q15 CONTROL-2 PCB ASSY	[31203,31203C]				
		930C589Q14 CONTROL-2 PCB ASSY	[31303,31303C]				
		930C590Q12 CONTROL-3 PCB ASSY	[35303]				
		930C591Q11 CONTROL-4 PCB ASSY	[35304]				
		920D596Q08 MAIN PCB ASSY	920A412-15+[31203,31203C]				
		920D596Q07 MAIN PCB ASSY	920A412-14+[31303,31303C]				
		920A412Q12 MAIN PCB ASSY	[35303]				

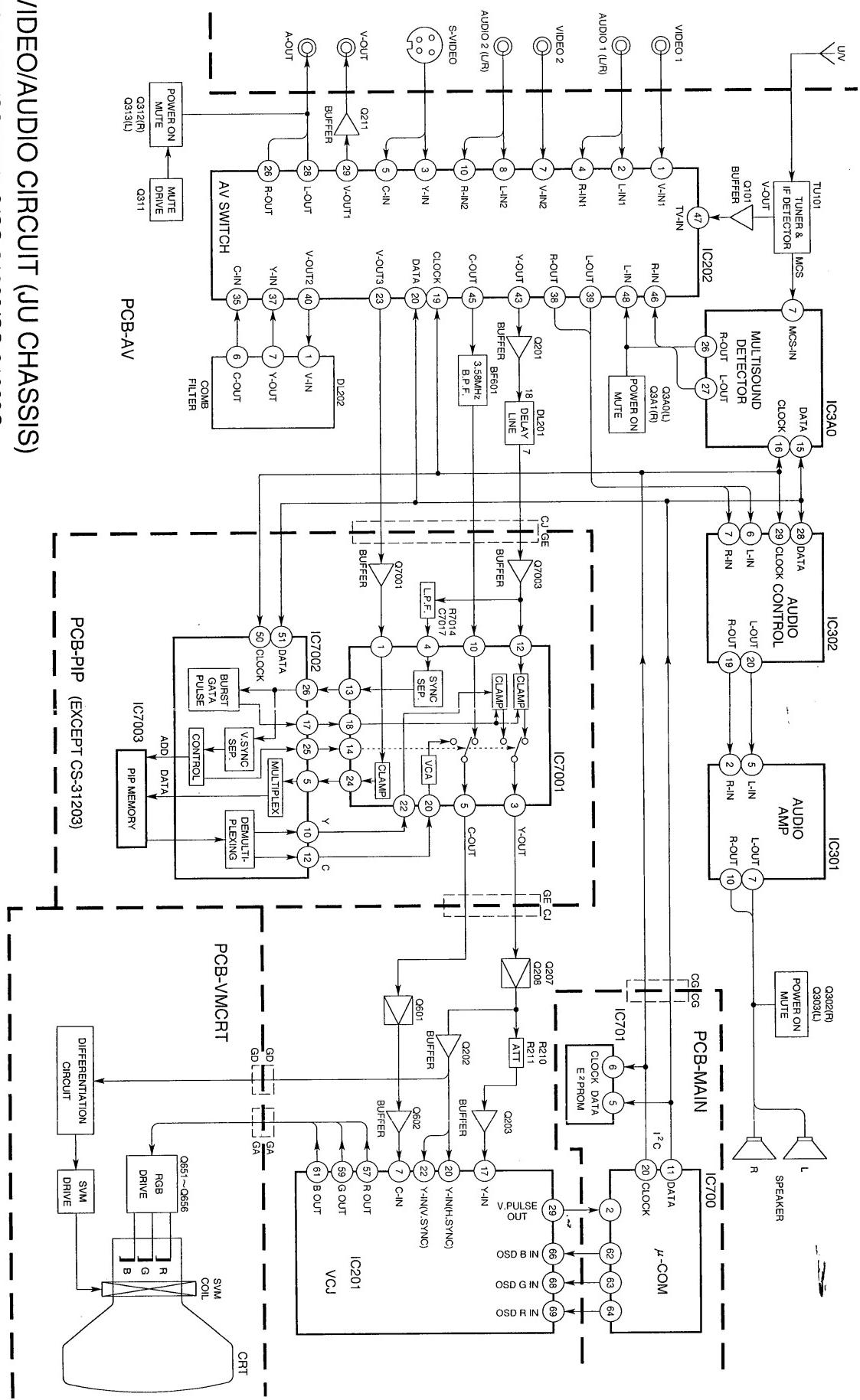
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
PACKING PARTS AND ACCESSORY							
	803B650O10	PACKING CUSHION	[31203,31303]				
	803A256O10	PACKING CUSHION	[35303]				
	871C905O90	INSTRUCTION BOOK	[31203]				
	871C932O30	INSTRUCTION BOOK	ENGLISH/FRENCH[31203C]				
	871C906O00	INSTRUCTION BOOK	[31303,35303]				
	871C932O40	INSTRUCTION BOOK	ENGLISH/FRENCH[31303C]				
	871C906O20	INSTRUCTION BOOK	[35304]				
	831C060O80	PACKING BAG	[35304]				
	802B454O10	PACKING CASE	BOTTOM[35304]				
	802B454O60	PACKING CASE	SLEEVE[35304]				
	802A112O30	PACKING CASE	[31203]				
	802A112O40	PACKING CASE	[31303]				
	802A112O50	PACKING CASE	[35303]				
	802B454O70	PACKING CASE	[35304]				
	802B454O40	PACKING CASE	BACK[35304]				
	831D191O30	PACKING BAG	266.7X381				
			[31203,31303,35303,35304]				
	831D226O20	PACKING BAG	1500X1200[31203,31303]				
	831D226O30	PACKING BAG	[35303]				
	829D149O10	PACKING SHEET	1423X1016X3[35304]				
	829D149O20	PACKING SHEET	1423X1016X[35304]				
	290P035O30	REMOTE HAND UNIT	[31203,31203C]				
	290P035O50	REMOTE HAND UNIT	[31303,31303C,35303,35304]				
	871B061O10	SAFETY TIP CARD	[31203C,31303C]				
OTHER CRITICAL COMPONENTS							
R 305	103P338O40	R-CARBON-25	1/4W 2.20-J				
R 306	103P338O40	R-CARBON-25	1/4W 2.20-J				
R 5300	109D031O10	R-COMPOSITION	1/2W 22K-M[35303,35304]				
R 984	103P338O70	R-CARBON-25	1/4W 3.90-J				

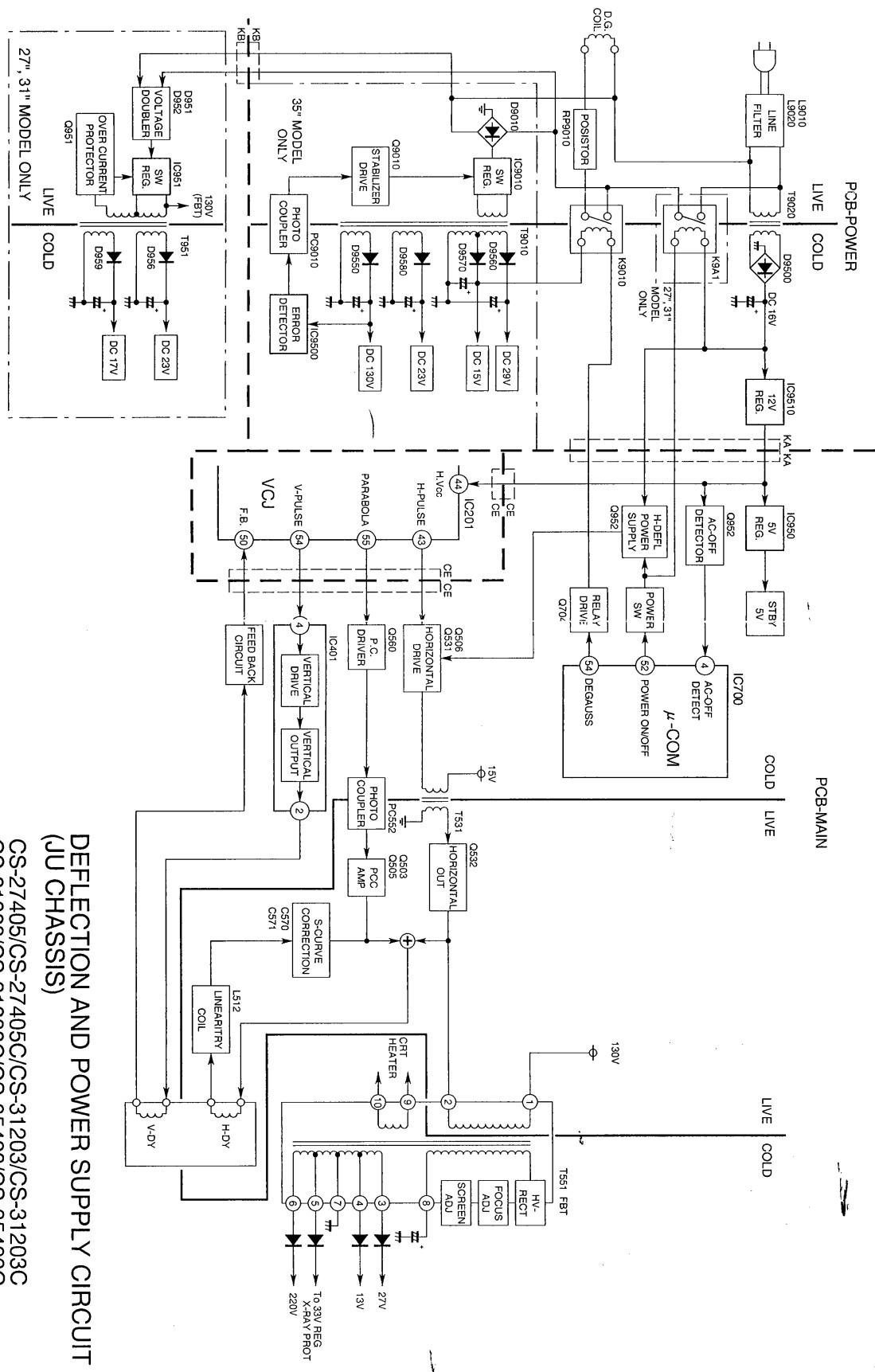
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VIDEO/AUDIO CIRCUIT (JU CHASSIS)

CS-27405/CS-27405C/CS-31203/CS-31203C
CS-31303/CS-31303C/CS-35403/CS-35403C
CS-35303/CK-35304





DEFLECTION AND POWER SUPPLY CIRCUIT (JU CHASSIS)

CS-27405/CS-27405C/CS-31203/CS-31203C
CS-31303/CS-31303C/CS-35403/CS-35403C
CS-35303/CK-35304